Subject Matter Code: C-15 Salinity

Comment ID: CTR-016-004
Comment Author: San Francisco Bay RWQCB
Document Type: State Government
State of Origin: CA
Represented Org:
Document Date: 09/25/97
Subject Matter Code: C-15 Salinity
References:
Attachments? Y
CROSS REFERENCES

Comment: Proposed Application of Saltwater and Freshwater Criteria

In the proposed California Toxics Rule, EPA is proposing to use the definitions in 40 CFR 131.38(c)(3) to determine when saltwater and freshwater criteria should apply to water bodies. The proposal is to use the lower of the freshwater and saltwater criteria when salinities are between less than 1 ppt 95% of the time and greater than 10 ppt 95% of the time. In the 1995 Basin Plan amendments, the Regional Board included a different application procedure. Like EPA, the Regional Board uses the lower of the freshwater and saltwater objectives for estuarine waters, but defines estuarine water as having salinities between less than 5 ppt 75% of the time and greater than 5 ppt 75% of the time, or "tidally influenced fresh waters that support estuarine beneficial uses." The Regional Board elected to use a combination of biological indicators (estuarine beneficial uses) and salinity measurements to define estuarine areas because of the difficulty of accurately depicting estuarine zones using salinity measurements without extensive data spanning channel depth and width, and variability with tides, seasons, and riverine flows.

The Regional Board's definition of how salt and freshwater objectives/ standards will be applied in estuarine waters was part of the 1995 Basin Plan amendments (p. 4-13, first column--attached). Those amendments have been formally approved by all of the appropriate state agencies and have been submitted to EPA for final approval.

We recommend that EPA add a provision to the proposed rulemaking that indicates the primary decision for whether waters are classified as estuarine should be based on the presence of estuarine organisms for any significant period of time and the secondary decision based on salinity measurements. In addition, we request that EPA specifically exclude the proposed federal definition of estuarine waters for implementation of federally promulgated standards within the San Francisco Bay Region (or formally approve the 1995 Basin Plan amendments and indicate that Basin Plan provisions take precedence over provisions in this proposed rule).

Response to: CTR-016-004

Comment ID: CTR-035-030
Comment Author: Tri-TAC/CASA
Document Type: Trade Org./Assoc.
State of Origin: CA
Represented Org:
Document Date: 09/25/97

Subject Matter Code: C-15 Salinity
References:
Attachments? N
CROSS REFERENCES

Comment: pp. 42183-42184 -- Applicability of Freshwater or Saltwater Aquatic Life Criteria in Estuarine Environments The proposed regulation includes a provision for estuarine waters where the salinity is between 1 and 10 parts per thousand, whereby the more stringent of the freshwater and saltwater criteria would apply unless EPA approves the application of the freshwater or saltwater criteria based on a biological assessment. We challenge the basis for the following rationale put forth in the Preamble: "In the brackish water transition zones of estuaries, there generally will be a mix of freshwater and saltwater species. Generally, therefore, it is reasonable for the more stringent of the freshwater or saltwater criteria to apply." We find this conclusion to be questionable; it is equally possible that the saltwater or freshwater species that occur in brackish environments may be more tolerant rather than more sensitive. We recommend that EPA include these procedures for determining appropriate criteria for those instances where salinity is between 1 and 1O parts per thousand as guidance in the Preamble, rather than placing them in the rule itself.

Response to: CTR-035-030

Comment ID: CTR-038-011
Comment Author: Sonoma County Water Agency
Document Type: Sewer Authority
State of Origin: CA
Represented Org:
Document Date: 09/25/97
Subject Matter Code: C-15 Salinity
References:
Attachments? Y
CROSS REFERENCES

Comment: 10. EPA should allow permit authorities flexibility in establishing saltwater criteria where the salinity is between 1 and 10 parts per thousand. The proposed rule states that for these salinities the more restrictive of the salt and freshwater criteria should apply. This is unnecessary and has the effect of preempting the permit authority's flexibility to apply the most appropriate criteria in any given circumstance. In preempting the permit authority's flexibility, it conflicts with numerous statements in the Preamble and the economic analysis, which point to the considerable flexibility the State has in implementing the criteria.

Response to: CTR-038-011

Comment ID: CTR-054-011
Comment Author: Bay Area Dischargers Assoc.
Document Type: Sewer Authority
State of Origin: CA
Represented Org:

Document Date: 09/25/97
Subject Matter Code: C-15 Salinity
References:
Attachments? Y
CROSS REFERENCES

Comment: EPA should allow permit authorities flexibility in establishing saltwater criteria where the salinity is between 1 and 10 parts per thousand. The rule states that for these salinities the more restrictive of the salt and freshwater criteria should apply. This is unnecessary and has the effect of preempting the permit authority's flexibility to apply the most appropriate criteria in any given circumstance. In preempting the permit authority's flexibility, it conflicts with numerous statements in the Preamble and the economic analysis, which point to the considerable flexibility the State has in implementing the criteria.

Response to: CTR-054-011

Comment ID: CTR-058-004
Comment Author: Western States Petroleum Assoc
Document Type: Trade Org./Assoc.
State of Origin: CA
Represented Org:
Document Date: 09/26/97
Subject Matter Code: C-15 Salinity
References:
Attachments? Y
CROSS REFERENCES

Comment: 3. Freshwater/saltwater. WSPA supports giving permit writers and other regulators flexibility when selecting the appropriate criteria when waters may not be clearly salty or clearly fresh.

EPA proposes to require using the more stringent of freshwater or saltwater criteria when the receiving water is neither >10 ppt salinity 95% of the time (i.e., clearly salty) nor <1 ppt salinity 95% of the time (i.e., clearly fresh). This approach is needlessly inflexible. Permit writers and others should be allowed to judge which criterion is appropriate.

For example, there may be many cases when the freshwater criterion is lower, but the receiving water is salty enough that no freshwater aquatic life could survive. Thus, a freshwater criterion to protect species that are not there is invalid, inappropriate, and potentially wasteful of the state's resources if it causes point sources to invest in treatment merely for treatment's sake. Conversely, a saltwater criterion might be the lower value in a receiving water which is never salty enough to support marine life. A similar argument applies.

Lastly, it will probably be common to find receiving waters which may support both marine and freshwater organisms and in such cases the permit writer would use the more restrictive criterion. Each receiving water should be evaluated based on the facts and the permit writer should be allowed to exercise their professional judgment.

EPA trusts permit writers to select different criteria based on seasonal concerns. There is no reason not

to allow them to select the appropriate criteria I in the'case of ambiguous salinity as well.

Response to: CTR-058-004

Comment ID: CTR-059-011
Comment Author: Los Angeles County Sanit. Dist
Document Type: Sewer Authority
State of Origin: CA
Represented Org:
Document Date: 09/26/97
Subject Matter Code: C-15 Salinity
References: Letter CTR-059 incorporates by reference letter CTR-035
Attachments? Y
CROSS REFERENCES

Comment: Applicability of Freshwater/Saltwater Criteria in Estuarine Environments

We disagree with EPA's proposal in the Preamble to apply the more stringent of the freshwater and saltwater criteria when waters are in an intermediate salinity range or when salinity fluctuates diurnally due to tidal action. We believe a more valid approach is for the State to approve the choice of criteria based on a biological assessment. There may be many cases when the freshwater criterion is lower, but the receiving water is salty enough so that no freshwater aquatic life could survive there. Under this scenario, the application of a freshwater criterion to protect species that are not present is inappropriate and a waste of resources should it trigger the need for additional control efforts. A similar argument applies in cases where a saltwater criterion is used for a receiving water which is never salty enough to support marine life. Each receiving water should be evaluated based on the facts and the permit writer should be allowed to exercise his professional judgment in selecting the appropriate criteria and establishing water quality-based effluent limits. We recommend that EPA delete this provision from the Preamble, and if necessary develop guidance on determining appropriate criteria for those instances where salinity is between 1 and 10 parts per thousand.

Response to: CTR-059-011

Subject Matter Code: C-16 SDWA

Comment ID: CTR-025-001a
Comment Author: Metro. Water Dist. of So. Cal.
Document Type: Water District
State of Origin: CA
Represented Org:
Document Date: 09/26/97
Subject Matter Code: C-16 SDWA
References:
Attachments? Y
CROSS REFERENCES C-20

Comment: Proposed California Toxic Rule

The Metropolitan Water District of Southern California (Metropolitan) appreciates this opportunity to comment on the U.S. Environmental Protection Agency's (U.S.EPA) proposed California Toxics Rule(CTR). Metropolitan, through its 27 member agencies, supplies nearly 60% of the drinking water used by approximately 16 million people living in the six-county region of Southern California. Our sources of supply are surface waters from Northern California and the Colorado River.

The water quality criteria proposed in the CTR are of critical importance to Metropolitan and other drinking water suppliers. These criteria create the basis for source water protection activities which are the first line of defense for ensuring a safe drinking water supply. Further, the criteria help protect aquatic species, including the unique aquatic resources of the Bay-Delta. The health of the Bay-Delta ecosystem and waters tributary to the Delta is linked to the amount of water available for export and thus directly affects water supply reliability of the exporting water agencies such as Metropolitan. Lastly, the CTR criteria affect the ability of water suppliers to operate and maintain their facilities.

Metropolitan recognizes that the CTR is only required to address the Clean Water Act's "priority pollutants". We note, however, that many of the drinking water contaminants regulated under the Federal and/or California Safe Drinking Water Acts (SDWA) are not among the priority pollutants. Table I lists the drinking water chemical constituents regulated under the California SDWA which are not priority pollutants. (The California SDWA regulates a broader set of contaminants than the Federal SDWA and provides the appropriate regulatory comparison since the CTR pertains solely to California.) Drinking water beneficial, uses cannot be fully protected without water quality criteria for all California SDWA regulated contaminants. Metropolitan requests that U.S. EPA consider including human health criteria for the contaminants listed in Table I as part of the CTR.

Response to: CTR-025-001a

The scope of today's rule is to establish numeric criteria to bring California into compliance with CWA Section 303(c)(2)(B). Section 303(c)(2)(B) requires adoption of numeric criteria for priority toxic pollutants contained in CWA Section 307(a) for which EPA has issued Section 304(a) criteria guidance the discharge or presence of which could reasonably be expected to interfere with the designated uses of state waters. The promulgation of pollutants that are not identified as priority toxic pollutants (i.e, those pollutants that are not contained in the CWA Section 307(a) list) are outside of the scope of today's rule.

While EPA agrees that there may be other pollutants that adversely impact environmental protection,

EPA notes that states do have the authority to develop and adopt criteria for pollutants that are not contained on the 307(a) list in order to protect the designated uses of their waters. The Water Quality Standards Regulation (see 40 CFR 131) requires all states, including California, to adopt criteria that provide sufficient coverage to protect the designated uses of their waters. Furthermore, where a state has not adopted sufficient coverage of numeric criteria to protect the designated uses, the state may utilize its narrative criteria to derive criteria for pollutants to supplement the numeric criteria.

Comment ID: CTR-025-002b
Comment Author: Metro. Water Dist. of So. Cal.
Document Type: Water District
State of Origin: CA
Represented Org:
Document Date: 09/26/97
Subject Matter Code: C-16 SDWA
References:
Attachments? Y
CROSS REFERENCES C-17a

Comment: For California SDWA regulated contaminants which are also priority pollutants, the human health water quality criteria proposed under the CTR and existing California SDWA primary Maximum Contaminant Levels (MCLs) are not always consistent. While CTR criteria apply to source waters and drinking water MCLs apply to finished drinking water, Metropolitan urges that U.S. EPA ensure greater consistency between these regulatory levels.

Table 2 identifies the priority pollutants which have California SDWA primary MCLs and for which the CTR either does not establish any human health criteria or the CTR human health criteria exceed the California SDWA primary MCL. Metropolitan requests that U.S. EPA set the CTR human health criteria for the contaminants in Table 2 at levels not to exceed the California SDWA MCL.

Response to: CTR-025-002b

When multiple criteria apply to a waterbody, the most stringent criterion governs. For instances where California has adopted an MCL as a water quality standard that is more stringent than criteria contained in the final CTR, the MCL would provide the basis for protecting the drinking water use.

Comment ID: CTR-025-003b
Comment Author: Metro. Water Dist. of So. Cal.
Document Type: Water District
State of Origin: CA
Represented Org:
Document Date: 09/26/97
Subject Matter Code: C-16 SDWA
References:
Attachments? Y
CROSS REFERENCES C-17a
C-12a

Comment: Human health water quality criteria for a number of other priority pollutants are at levels significantly below the corresponding California SDWA MCL. While Metropolitan favors a margin of safety between human health-water quality criteria and the SDWA MCL, significant differences between these two regulatory requirements can create problems in the course of maintenance of drinking water facilities.

For example, water utilities need to periodically "de-water" their lines as part of routine maintenance. The de-watering of distribution lines transporting treating drinking water results in discharges containing trihalomethanes (THMs). The CTR proposes human health criteria for each of the four compounds comprising the THM classification. The total limit under the CTR for THMs as a group is 11 ug/L, significantly below the California SDWA MCL of 100 ug/L as well as the proposed level of 80 ug/L for Stage 1 of the Disinfection/Disinfectant By-Products Rule. Thus, the discharge of water that meets California SDWA standards could potentially violate CTR human health criteria if that water is discharged to a source of drinking water supply. Metropolitan requests that EPA establish CTR human health criteria for THMs consistent with the California SDWA MCLs for THMS.

Response to: CTR-025-003b

See response to CTR-025-003b.

Comment ID: CTR-025-004b
Comment Author: Metro. Water Dist. of So. Cal.
Document Type: Water District
State of Origin: CA
Represented Org:
Document Date: 09/26/97
Subject Matter Code: C-16 SDWA
References:
Attachments? Y
CROSS REFERENCES C-02b

Comment: The proposed CTR freshwater aquatic life criteria for copper are also problematical for many drinking water suppliers. Copper algaecides are a necessary element of algal control strategies for drinking water reservoirs and conveyances. Even with a comprehensive reservoir management program based on immunological principles, copper algaecides need to be part of the algal control arsenal. Algal growth, if uncontrolled, can lead to unacceptable levels of trihalomethanes (THMS) in treated water supplies, among other impacts.

The CTR proposes freshwater aquatic life criteria for copper which could severely hamper the ability of drinking water suppliers to use copper algaecides. The dosage of these algaecides which is effective for controlling algal growth could lead to periodic exceedances of the copper freshwater criteria. Yet, use of copper algaecides is sometimes necessary to protect drinking water beneficial uses, and there is currently no economically feasible alternative available. Drinking water suppliers have the difficult task of meeting conflicting requirements to protect drinking water beneficial uses while ensuring that aquatic life criteria for copper are met.

Response to: CTR-025-004b

See responses to CTR-020-018 and CTR-025-002a.

EPA believes that discharges can meet both the requirements of the Safe Drinking Water Act (SDWA) and the Clean Water Act (CWA) after the CTR is promulgated. EPA believes that any final limits for copper would be feasible to meet because it is unlikely that a discharger would receive criteria end-of-pipe limits due to the dilution available in the receiving stream, as well as other factors taken into account, when translating a criterion into a water quality criteria-based effluent limit. EPA acknowledges that controlling trihalomethanes is important, but does not believe it is incompatible with protecting aquatic life in the stream. EPA is including the freshwater copper criteria in today's rule to ensure adequate protection of aquatic organisms in California. EPA also notes that there are some flexibilities and regulatory relief mechanisms that California may exercise to assist dischargers in meeting their permit limits for the criteria included in today's rule. (See preamble discussion on E.O. 12866).

Comment ID: CTR-025-006b
Comment Author: Metro. Water Dist. of So. Cal.
Document Type: Water District
State of Origin: CA
Represented Org:
Document Date: 09/26/97
Subject Matter Code: C-16 SDWA
References:
Attachments? Y
CROSS REFERENCES B

Comment: Some of the concerns noted above could be addressed through the implementation provisions of the CTR. As you know, the State Water Resources Control Board has just made available for public review the Proposed Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California (Proposed ISWP/EBEP Policy), the implementing document for the CTR. Because of the length of the document (several hundred pages) and the fact that it has only recently become available, there has been insufficient time for thorough review. Yet, this document is crucial to understanding the practical impact of the CTR.

Metropolitan strongly requests that U.S. EPA extend the comment period on the CTR to December 10, 1997, the end of the comment period for the Proposed ISWP/EBEP Policy. This would allow drinking water suppliers and others affected by the CTR to evaluate the CTR in the context of its implementation. Without workable implementation provisions, the operational and economic impacts on drinking water suppliers could be significant and may need to be taken into account in the CTR. If the comment period is not extended, we ask that U.S. EPA fully consider the impacts of the freshwater aquatic life criteria on the operation and maintenance activities of drinking water suppliers and the effect on water reclamation activities and to modify the CTR, as necessary, so that these activities can continue to be undertaken in an economically feasible manner.

The CTR forms the backbone of the water quality regulatory process and Metropolitan urges U.S. EPA to review the proposed criteria in light of regulatory requirements of the California/Federal SDWA and the operating and maintenance requirements of drinking water suppliers. If you have any questions regarding Metropolitan's comments, please feel free to call Marcia Torobin of my staff at (213) 217-7830.

Response to: CTR-025-006b

See responses to CTR-025-002b, CTR-025-004b.

Subject Matter Code: C-17 Methodologies

Comment ID: CTR-061-005b
Comment Author: G. Fred Lee & Associates
Document Type: Academia
State of Origin: CA
Represented Org:
Document Date: 09/25/97
Subject Matter Code: C-17 Methodologies
References:
Attachments? Y
CROSS REFERENCES I-03

Comment: Additional Comments

Presented below are some specific comments on statements made in the proposed CTR Federal Register.

Page 42160, third column, near the bottom, municipal stormwater dischargers should be added to the list of NPDES dischargers who have an interest in this rule. If anything, they probably will be affected more than any other entity.

Page 42161, third column, first paragraph, states,

"Numeric criteria for toxic pollutants allow the State and EPA to evaluate the adequacy of existing and potential control measures to protect aquatic ecosystems and human health. Numeric criteria also provide a more precise basis for deriving water quality-based effluent limitations in National Pollutant Discharge Elimination System (NPDES) permits to control toxic pollutant discharges."

That statement is somewhat unreliable and misleading.

While it is bureaucratically simpler for regulatory agencies to numerically compare concentrations found in an effluent or in ambient waters with a chemical concentration-based water quality criterion, the claim made in the quoted statement is not necessarily true. In fact, rarely is the exceedance of numeric criteria a reliable basis for assessing the impacts of constituents on human health or the environment. While it may be more precise, it can be highly inaccurate. This is one of the areas that needs to be corrected by the US EPA where biological effects-based approaches are used, rather than chemical-based approaches for regulating such impacts as aquatic life toxicity for potentially toxic constituents.

Response to: CTR-061-005b

EPA agrees that storm water dischargers may be affected by this rule. EPA does not agree that application of numeric criteria, after adjustment by the site-specific water-effect ratio provided by the rule, would rarely be reliable. Also see response to CTR-020-006.

In addition, EPA believes that for the regulated community, the chemical-specific approach offers the advantage of allowing the permittee to focus immediately on a single contaminant for the purposes of designing effluent treatment. In contrast, whole effluent toxicity often leads to a facility conducting fairly extensive investigations to identify the cause of adverse effects on the tested organisms and to

develop an effective approach to reducing the effects.

Comment ID: CTR-061-008
Comment Author: G. Fred Lee & Associates
Document Type: Academia
State of Origin: CA
Represented Org:
Document Date: 09/25/97
Subject Matter Code: C-17 Methodologies
References:
Attachments? Y
CROSS REFERENCES

Comment: Page 42162, third column, last paragraph, states,

"The forward to that guidance noted EPA's two-fold water quality based approach to controlling toxic pollutants: chemical specific numeric criteria and biological testing in whole effluent or ambient waters to comply with narrative 'no toxics in toxic amounts' standards. "

That statement was published in 1983 in the US EPA Water Quality Standards Handbook. While the significant technical deficiencies of this two-fold approach have been known now for over 15 years, the Agency has still not addressed the over-regulation that occurs from trying to use chemical concentration-based criteria to regulate biological impacts associated with aquatic life toxicity and excessive bioaccumulation of hazardous chemicals in aquatic life tissue.

Response to: CTR-061-008

EPA does not agree. EPA believes that the rule's provision for site-specific adjustments to criteria addresses the problem of unnecessarily stringent chemical criteria. See response to CTR-061-005b. With respect to bioaccumulative chemical risks, EPA believes that the best way to monitor bioaccumulative chemicals is to measure the concentration in the portions or tissues of aquatic biota that are consumed by humans and wildlife.

Comment ID: CTR-061-009
Comment Author: G. Fred Lee & Associates
Document Type: Academia
State of Origin: CA
Represented Org:
Document Date: 09/25/97
Subject Matter Code: C-17 Methodologies
References:
Attachments? Y
CROSS REFERENCES

Comment: Page 42163, first column, last paragraph, states,

"Congress was frustrated that states were not using the numerous CWA section 304(a) criteria guidance that EPA had and was continuing to develop, to assist states in controlling the discharge of priority toxic pollutants. "

The reason the states were not adopting those criteria was that the criteria as implemented tend to over-regulate. The criteria do not properly consider how chemical constituents impact beneficial uses. The US EPA's adjustments of the criteria do not properly incorporate the aqueous environmental chemistry of the constituents in developing site-specific criteria. Basically, there is still a significant problem with how the US EPA developed criteria relative to how they are implemented at the state and local level. I was involved as a US EPA invited peer-reviewer of the criteria development approach, as well as several criterion documents that became part of the "Gold Book" criteria. I am, therefore, familiar with this topic area and know that it was never the intent of those who helped develop those criteria to have them mechanically implemented, as is being done today, into discharge limits. This leads to significant over-regulation and significant waste of public and private funds in construction of unnecessary treatment works beyond those that would be needed to protect the designated beneficial uses of a waterbody.

One of the fundamental problems that exist today is the US EPA's Independent Applicability Policy. That Policy was adopted without public review in the early 1990s. It establishes that chemical-specific criteria must be met, even if appropriately conducted biological assessments of toxicity, bioaccumulation, etc. show that the chemical-specific criteria are technically invalid for the particular situation of concern. This is a fundamentally flawed approach that should be terminated. This issue has been discussed in a paper, "Independent Applicability of Chemical and Biological Criteria/standards and Effluent Toxicity Testing" (Lee and Jones-Lee, 1995). While the US EPA criteria and standards group in Washington, D.C. has indicated that it is proposing to change the Independent Applicability Policy, the proposed changes as discussed thus far are not adequate to eliminate the fundamentally technically flawed aspects. The purpose of water quality criteria and standards is to protect designated beneficial uses, which for aquatic life means to prevent toxicity as might be measured by the kinds of tests that were used to establish the criteria. It is inappropriate to require achieving chemical-specific criteria as they currently exist, in waters in which there is no toxicity; that Independent Applicability Policy is obviously fundamentally flawed and should not be perpetuated.

Response to: CTR-061-009

EPA does not agree that the criteria, when adjusted for site-specific factors as provided by the rule, do not properly consider how chemical constituents impact beneficial uses. In setting criteria, EPA considers the scientific evidence of the toxicity of a pollutant. EPA stands behind the judgements made in its derivation of the criteria, and believes these judgements are reasonable.

The independent application policy is outside the scope of this rule. Nevertheless, independent application means that in stream biological monitoring and ambient or effluent toxicity testing can be used in a scientifically sound procedure for site-specific modification of the chemical criteria, but may not be used as a rationale simply to suspend implementation of the criteria.

Comment ID: CTR-061-010
Comment Author: G. Fred Lee & Associates
Document Type: Academia
State of Origin: CA

Represented Org:
Document Date: 09/25/97
Subject Matter Code: C-17 Methodologies
References:
Attachments? Y
CROSS REFERENCES

Comment: Page 42168, first column, first paragraph, states,

"EPA's guidelines are designed to derive criteria that protect aquatic communities by protecting most of the species and their uses most of the time, but not necessarily all of the species all of the time (1985 Guidelines, page 1). EPA 's 1985 Guidelines attempt to provide a reasonable and adequate amount of protection with only a small possibility of substantial overprotection or underprotection. "

While the statement is appropriate for under-protection for the regulated chemicals, it is inappropriate for over-protection. Many of the water quality criteria tend to grossly over-protect based on the way they are implemented. This applies even to metals implemented as salt species.

Response to: CTR-061-010

EPA does not believe that the rule's provisions tend to grossly over-protect. The rule includes some provisions to modify criteria concentrations, averaging periods, and allowable exceedance frequencies to avoid either over- or under-protection.

Comment ID: CTR-061-011
Comment Author: G. Fred Lee & Associates
Document Type: Academia
State of Origin: CA
Represented Org:
Document Date: 09/25/97
Subject Matter Code: C-17 Methodologies
References:
Attachments? Y
CROSS REFERENCES

Comment: Page 42168, first column, first paragraph, the statement, "The approach EPA is using is believed to be as well balanced as possible, given the state of the science." is inappropriate. The US EPA has still not graduated to the level of science that was present as part of the National Academies of Science and Engineering "Blue Book" "Water Quality Criteria" which focused on directly measuring toxicity of chemicals rather than trying to estimate toxicity through chemical-specific criteria.

Response to: CTR-061-011

EPA stands behind its technical assumptions made in the derivation of its criteria, and believes the resulting criteria are reasonable. EPA believes the calculation of water quality criteria for aquatic life based on toxicity data for aquatic species is appropriate. Congress further endorsed this approach in the 1987 amendments that added section 303(c)(2)(B) to the CWA.

EPA does not believe that chemical-specific criteria are inconsistent with the 1972 Blue Book approach. The Blue Book recommended numerous chemical-specific criteria, where available toxicity data were sufficient to support them.

Comment ID: CTR-096-001b
Comment Author: City of Modesto
Document Type: Local Government
State of Origin: CA
Represented Org:
Document Date: 09/25/97
Subject Matter Code: C-17 Methodologies
References:
Attachments? N
CROSS REFERENCES I-03

Comment: Thank you for the opportunity to comment on the proposed California Toxics Rule. The City's comments are related to five main concepts:

1. The numerical standards are ambiguous or incomplete to address the variety of operating conditions under which discharges to waters of the United State occur.

Specifically, the City submits the following comments:

A. California's receiving waters have a very wide diversity of hydraulic and environmental conditions. The numerical standards do not take into account the wide range of rainfall patterns, storm durations, irrigation flows and power generation flows that are the current aquatic habitat. California's rivers are highly regulated, highly managed. The proposed regulations neither address this variety, nor provide a means by which numerical standards can be readily developed to address such variety.

B. The California Toxic Rule presents new water quality standards for the State of California. This rule presents water quality standards for all water bodies within the state. Water quality standards as presented in this rule would apply to all environmental conditions (dry and wet weather). During wet weather, conditions in the receiving streams can be extremely variable due to the quality and quantity of stormwater. Treatment plants generally have hydraulic capacity to process twice the average dry weather flow received. Water quality standards were developed based on dry weather conditions. Therefore, numerical water quality standards should not need to be achieved during storm events. If water quality standards need to be achieved during storm conditions, it is suggested that new standards be developed to account for the changes in environmental conditions.

Response to: CTR-096-001b

The criteria specified in the rule are adequate across California because they are designed to apply under all environmental conditions. EPA does not agree that its criteria concentrations were based on dry-weather conditions. Most of concentrations are based on laboratory toxicity tests. EPA agrees that its numerical exceedance frequency and design flow specifications are based on dry-weather conditions. Nevertheless, the rule provides for alternative development of averaging periods and exceedance frequencies, thereby allowing the extension of their applicability to wet-weather conditions. In addition, the Rule provides for site-specific modifications of criteria concentrations, to account for a site's water

quality characteristics.

The criteria specified in the rule are adequate across California because they are designed to apply under all environmental conditions. EPA does not agree that its criteria concentrations were based on dry-weather conditions. Most of concentrations are based on laboratory toxicity tests. EPA agrees that its numerical exceedance frequency and design flow specifications are based on dry-weather conditions. Nevertheless, the rule provides for alternative development of averaging periods and exceedance frequencies, thereby allowing the extension of their applicability to wet-weather conditions. In addition, the Rule provides for site-specific modifications of criteria concentrations, to account for a site's water quality
characteristics.

Subject Matter Code: C-17a Methodologies Human Health

Comment ID: CTR-002-002b
Comment Author: Comm. for a Better Environment
Document Type: Environmental Group
State of Origin: CA
Represented Org:
Document Date: 09/24/97
Subject Matter Code: C-17a Methodologies Human Health
References:
Attachments? Y
CROSS REFERENCES C-14

Comment: I. TOXIC POLLUTANTS THREATEN PUBLIC HEALTH AND SAN FRANCISCO BAY.

Toxic pollution causes harm in San Francisco Bay. Species of bivalve shellfish, plankton and phytoplankton that are especially vulnerable to toxic trace elements such as copper are decimated in its southern reach though they thrive in comparable estuaries with less metals pollution. (*1) (*2) Mounting evidence suggests its sediment is toxic to some aquatic life.(*3) Extensive research strongly suggests that PCBs and PAHs released to the Bay negatively effect reproduction in starry flounder. (*4) Reproductive effects are also correlated with PCBs in Bay cormorant eggs, Bay harbor seals have PCBs levels twice those associated with immunotoxicity and a disease epidemic that decimated a European population of this species.(*5) Health advisories are in effect because dioxin, PCBS, mercury, chlordane, DDT, dieldrin, and selenium contaminate Bay food resources eaten by the public (*6) (*7)

Public health threats from toxics in the food chain are of particular concern. A recent count found approximately 270,000 fishing licenses were issued to Bay Area residents. Surveys by CBESAFER!, the Save San Francisco Bay Association, and the Asian Pacific Environmental Network show that many people fish the Bay regularly to supplement their families' diet, that some people eat up to a maximum of a pound of fish per day, and that the majority of those who eat their catch regularly are people of color. [See attachment (*8)] A pound of fish per day is about 480 oz./month, sixty times the 8 oz./month "safety" cutoff for cancer and slow learning in the state's advisory.(*6)

In addition to these severe environmental health and justice problems, pollutant monitoring of the Bay is far from comprehensive, and undetected problems are likely. Indeed, EPA acknowledged that designated uses of the Bay are threatened or impaired by toxic pollutants when it named the Bay as a "toxic hot spot" under Section 304(l) of the Clean Water Act.(*9)

(*1) U.S. Geological Survey, 1992. Letter from Samuel N. Luoma, Ph.D., to Seven R. Ritchie, Executive Officer, Regional Water Quality Control Board. August 24, 1992.

(*2) Karras, 1992. Comparison of copper in waters of the southern reach of San Francisco Bay and ten other estuaries. Communities for a Better Environment (CBE). July, 1992.

(*3) San Francisco Estuary Institute, 1997. Regional monitoring program for trace substances 1995 annual report. Excerpts including pages 105, 3, and A-17 through A-24 showing the percentage of sediment bioassays (larval bivalve and Eohaustorius tests) that were toxic (less than 80% of control

value) at RMP stations from 1991-1996, sampling stations, and dissolved and total metal, and PAH concentrations in San Francisco Bay waters.

(*4) Spies et al., (2 papers), 1988: Effects of organic contaminants on reproduction of the starry flounder Platichthys stellatus in San Francisco Bay, I., Hepatic contamination and mixed-function oxidase (MFO) activity during the reproductive season. Marine Biology 98: 181-189; and II. Reproductive success of fish captured in San Francisco Bay and spawned in the laboratory. Marine Biology 98: 191-200. Excerpt including abstracts.

(*5) Kopec and Harvey, 1995, Toxic pollutants, health indices, and population dynamics of harbor seals in San Francisco Bay, 1989-1992. Moss Landing Marine Laboratories Technical Publication 96-4. ISSN 1088-2413. October, 1995. Excerpt regarding PCBs levels as compared to European seals in which a disease epidemic and population crash was observed.

(*6) Cal. EPA, 1994. Health advisory on catching and eating fish, interim sport fish advisory for San Francisco Bay. December, 1994.

(*7) California Department of Health Services, 1994. Health Warnings, Contained in the 1994 California Hunting Regulations for Resident and Migratory Game Birds issues by the state's Fish and Game Commission, Sacramento, Calif. Excerpt including health warning for selenium.

(*8) Previously unpublished data from a 1993-4 survey of 500 anglers using South and Central San Francisco Bay by Communities for a Better Environment-SAFER!; Save San Francisco Bay Association, 1995 (excerpt); West, 1992; West et al., 1992; Peterson et al., 1994; and USEPA, 1994.(excerpt of a draft report discussing and citing work by EPA, Wolfe and Walker (1987), Svensson (1991) and others. Includes analysis of the evidence..

(*9) EPA, 1990. Decision of the United States Environmental Protection Agency on listing under section 304(l) of the Clean Water Act regarding the state of California. Excerpt including pages listing San Francisco Bay waters as a "toxic hot spot."

Response to: CTR-002-002b

EPA acknowledges the impacts of pollution in the San Francisco Bay. Regarding the issue of fish consumption, refer to response to CTR-002-002a on this same issue.

Comment ID: CTR-002-004a
Comment Author: Comm. for a Better Environment
Document Type: Environmental Group
State of Origin: CA
Represented Org:
Document Date: 09/24/97
Subject Matter Code: C-17a Methodologies Human Health
References:
Attachments? Y
CROSS REFERENCES C-17b

Comment: B. The criteria do not control pollution that harms fishing, and aquatic life.

Adoption of EPA's proposed criteria values will result in less control of toxic pollutants that exceed state criteria values in large parts of San Francisco Bay. Examples of this problem are shown in tables 3 through 6 for mercury, copper, nickel and PAH measured in 1995 at monitoring stations shown on a map of San Francisco Bay (Figure 1). The EPA-proposed criteria would allow:

- mercury violations triggered by state criteria values through much of the northern reach of the Bay. EPA-proposed criteria trigger violations only at the Petaluma river mouth and in South Bay. Bay-wide, 8 of 15 state criteria-triggered violations (53%) are allowed by EPA criteria.

- copper violations triggered by state criteria (4.9 ug/L total) throughout the northern reach of the Bay. EPA'S 3.1 ug/L dissolved value triggers violations only in the Petaluma river and in' South Bay. Bay-wide, 15 of 25 state-triggered violations (60%) are allowed by EPA criteria,

- nickel violations triggered by state criteria throughout most of the northern and southern reaches of the Bay. EPA's 8.2 ug/L dissolved value triggers violations at the Petaluma river mouth and one South Bay slough. Bay-wide, 20 of the 22 water quality standards violations (91 %) triggered by the 7.1 ug/L criterion are allowed by EPA criteria.

- PAH violations triggered by state criteria at Coyote Creek and the Petaluma River mouth, EPA-proposed criteria trigger 4 violations for benzo(a)pyrene and indeno(1,2,3-cd)pyrene while state criteria trigger 40 violations for these compounds and 6 other PAHS.

Though EPA criteria do not control mercury except at the Petaluma River and in South Bay, a state human health advisory cites mercury contamination,(*6) and demonstrates that mercury restricts fishing uses Bay-wide. A severe threat and possible harm to aquatic life of the Bay's entire southern reach is evidenced by reduced abundance of all species known to be most vulnerable to copper toxicity, while these same species thrive in otherwise similar estuaries with less copper and nickel pollution.(*1) (*2) EPA criteria do not control copper and nickel in most of this area. Nor do EPA criteria control PAHs which -- with PCBs -- cause toxic effects in starry flounder in Central Bay.(*4)

Further, EPA'S proposed criteria include no criteria for 16 dioxin compounds that are included in the state dioxin criterion for TCDD equivalents.(*10) (*21) These 16 compounds are 6 dibenzo-paradioxins chlorinated in the 2,3,7, and 8 positions (except for 2,3,7,8-TCDD which is included in the EPA criterion), and 10 dibenzofurans chlorinated in the 2,3,7 and 8 positions. Under the state criteria, these 16 compounds and 2,3,7,8-TCDD are assigned toxicity equivalence factors as discussed in the proposed rule. Under the state criterion all these compounds are limited: if only 2,3,7,8-TCDD is present it cannot exceed 0.014 pg/L; if only OCDD is present it cannot exceed 14 pg/L; and if a mixture of dioxins is present the sum of their toxicities cannot exceed 0.014 pg/L. By failing to use toxicity equivalents and then failing to propose separate criteria for these 16 compounds, EPA is essentially deregulating 16 of the most toxic chemicals known to science even though these dioxins harm fishing uses, as shown by the health advisory discussed above. (*6)

The EPA criteria do not control toxics that threaten and harm the Bay, fishing and public health.

(*1) U.S. Geological Survey, 1992. Letter from Samuel N. Luoma, Ph.D., to Seven R. Ritchie, Executive Officer, Regional Water Quality Control Board. August 24, 1992.

(*2) Karras, 1992. Comparison of copper in waters of the southern reach of San Francisco Bay and ten

other estuaries. Communities for a Better Environment (CBE). July, 1992.

(*4) Spies et al., (2 papers), 1988: Effects of organic contaminants on reproduction of the starry flounder Platichthys stellatus in San Francisco Bay, I., Hepatic contamination and mixed-function oxidase (MFO) activity during the reproductive season. Marine Biology 98: 181-189; and II. Reproductive success of fish captured in San Francisco Bay and spawned in the laboratory. Marine Biology 98: 191-200. Excerpt including abstracts.

(*6) Cal. EPA, 1994. Health advisory on catching and eating fish, interim sport fish advisory for San Francisco Bay. December, 1994.

(*10) California State Water Resources Control Board, 1991. California Enclosed Bays and Estuaries Plan; water quality control plan for enclosed bays and estuaries in California. 91-13WQ. April, 1991. Excerpt including adopted water quality criteria and definition of terms.

(*21) California State Water Resources Control Board, 1997. Staff technical report, Division of Water Quality, Petitions of CBE, San Francisco BayKeeper, and Tosco Corporation for review of Order No. 95-138 of the San Francisco Bay Regional Water Quality Control Board. Office of Chief Counsel [OCC File Nos. A-983 and A-983(A)].

Response to: CTR-002-004a

See response to CTR-002-004b.

Comment ID: CTR-025-002a
Comment Author: Metro. Water Dist. of So. Cal.
Document Type: Water District
State of Origin: CA
Represented Org:
Document Date: 09/26/97
Subject Matter Code: C-17a Methodologies Human Health
References:
Attachments? Y
CROSS REFERENCES C-16

Comment: For California SDWA regulated contaminants which are also priority pollutants, the human health water quality criteria proposed under the CTR and existing California SDWA primary Maximum Contaminant Levels (MCLs) are not always consistent. While CTR criteria apply to source waters and drinking water MCLs apply to finished drinking water, Metropolitan urges that U.S. EPA ensure greater consistency between these regulatory levels.

Table 2 identifies the priority pollutants which have California SDWA primary MCLs and for which the CTR either does not establish any human health criteria or the CTR human health criteria exceed the California SDWA primary MCL. Metropolitan requests that U.S. EPA set the CTR human health criteria for the contaminants in Table 2 at levels not to exceed the California SDWA MCL.

Response to: CTR-025-002a

With respect to the issue of pollutants where the MCL is more stringent than the CTR criterion, EPA has determined that the CTR criteria are appropriate. As background, the Agency agrees with the commenter that the SDWA Maximum Contaminant Levels (MCLs) and the ambient water quality criteria are not always consistent. There are several reasons why this may be the case. First, while water quality criteria are health-based values only, MCLs take into account availability of treatment technologies and associated costs, and the availability of analytical methods. Second, the methodologies between the two programs differ in numerous ways, including the way that carcinogens are handled, the selection of the risk level, the approach to accounting for exposure, and the fact that water quality criteria specifically account for fish exposure. Third, there are differences associated with the fact that the information that each criterion is based on at the time of development also varies. That is, criteria developed at different times for the same chemical may be based on different exposure data and/or toxicity studies. The MCLs also apply to the chemical concentration in public water supply distributed tap water, whereas water quality criteria are used to develop State standards which are then used with water transport models to derive permit limits for point source discharges. For a more detailed discussion on the reasons for differences between these two methodologies, refer to the Notice of Draft Revisions to the Methodology for Deriving Ambient Water Quality Criteria for the Protection of Human Health (Federal Register, Vol. 63, No. 157, August 14, 1998). See also 63 FR 36742, 36775-36777 (July 7, 1998).

The Agency believes that for a given pollutant, the drinking water component of a water quality criterion should be consistent with the Maximum Contaminant Level Goal (MCLG) and is working to foster greater consistency between these two programs. Specifically, the Agency is currently revising the water quality criteria human health methodology, referenced above. Once finalized, EPA will revisit the methodology for deriving MCLGs, again, with a focus toward greater consistency.

The following policy is that recommended in the draft EPA methodology revisions when either water quality criteria have not been established or when the water quality criteria exceed MCL values. Although the use of MCLs is acceptable in the absence of 304(a) criteria, EPA is recommending that MCLs only be used when they are numerically the same as the MCLG and only when the sole concern is the protection of public water supply sources and not the protection of the CWA section 101(a) goal regarding fish consumption (e.g., where the chemically toxic form in water is not the form found in fish tissue and, therefore, fish ingestion exposure is not an issue of concern). Where consideration of available treatment technology, costs, or availability of analytical methodologies has resulted in MCLs that are less protective than MCLGs or water quality criteria, States and Tribes should consider using MCLGs and/or the health-based water quality criteria to protect water uses. Where fish consumption is an existing or potential activity, States and Tribes should ensure that their adopted human health criteria adequately address this exposure route. When fish consumption is a use, EPA recommends development of water quality criteria due to the fact that fish consumption and bioaccumulation are explicitly addressed. In all cases, water quality criteria should be set to ensure that all routes of exposure have been considered. EPA believes if water monitored at existing drinking water intakes has concentrations at or below MCLGs, then the water could be considered to meet a designated use under the CWA as a drinking water supply. In situations where a 304(a)criterion was less protective than an MCL, it is permissible to use the MCL as the criterion for segments designated as drinking water supplies. For carcinogens where the MCLG is equal to zero, States are encouraged to base water quality criteria at the drinking water intake on an acceptable cancer risk level (i.e., a level within the range of 10-4 to 10-6), to promote pollution prevention and anti-degradation.

The commenter has provided a short list indicating where some of the proposed CTR human health criteria are less stringent than the California MCLs. In some cases, the listed MCL has been developed by the State of California only - that is, there is no EPA national SDWA MCL (e.g., 1,3-dichloropropene, nickel). In some cases, California's MCL is more stringent than EPA's national SDWA MCL (e.g.,

benzene, vinyl chloride). However, where MCLs are more stringent than the CTR criteria, EPA has chosen not to revise the CTR number to make it the same as the MCL because the CTR criteria are adequate to protect the designated use.

As stated above, EPA is in the process of revising its water quality criteria human health methodology. EPA is currently reviewing public comments and is awaiting the results of a peer review on the published draft revisions. Again, as part of this effort, EPA intends to foster greater consistency between its drinking water and surface water programs, where appropriate.

Comment ID: CTR-025-003a
Comment Author: Metro. Water Dist. of So. Cal.
Document Type: Water District
State of Origin: CA
Represented Org:
Document Date: 09/26/97
Subject Matter Code: C-17a Methodologies Human Health
References:
Attachments? Y
CROSS REFERENCES C-16
C-12a

Comment: Human health water quality criteria for a number of other priority pollutants are at levels significantly below the corresponding California SDWA MCL. While Metropolitan favors a margin of safety between human health-water quality criteria and the SDWA MCL, significant differences between these two regulatory requirements can create problems in the course of maintenance of drinking water facilities.

For example, water utilities need to periodically "de-water" their lines as part of routine maintenance. The de-watering of distribution lines transporting treating drinking water results in discharges containing trihalomethanes (THMs). The CTR proposes human health criteria for each of the four compounds comprising the THM classification. The total limit under the CTR for THMs as a group is 11 ug/L, significantly below the California SDWA MCL of 100 ug/L as well as the proposed level of 80 ug/L for Stage 1 of the Disinfection/Disinfectant By-Products Rule. Thus, the discharge of water that meets California SDWA standards could potentially violate CTR human health criteria if that water is discharged to a source of drinking water supply. Metropolitan requests that EPA establish CTR human health criteria for THMs consistent with the California SDWA MCLs for THMS.

Response to: CTR-025-003a

In general, EPA believes it is appropriate that water quality criteria are at levels below MCLs in consideration of the Agency's goals of pollution prevention. That is, ambient waters should not be contaminated to a level where the burden of achieving health objectives is shifted away from those responsible for pollutant discharges and placed on downstream users to bear the costs of upgraded or supplemental water treatment. However, there are numerous reasons why a water quality criterion may not be the same as an MCL. This is discussed in the response to CTR-025-002a.

Regarding the issue of the proposed human health criteria for trihalomethanes (THMs), the commenter has made an inappropriate comparison between the values in the CTR and the Stage I

Disinfection/Disinfectant By-Product (DDBP) Rule. The commenter has attempted to add the separate values proposed in the CTR for each individual THM and compare that total to the DDBP value, which represents total THMs. These values cannot be compared directly because the basis for their derivation is significantly different. The THM values in the CTR are based on four separate cancer potency factor values (i.e., q1* values) and a chosen acceptable cancer risk level (specifically, a 10-6 risk level), which were then both used in the water quality criteria equation (which includes factors for body weight, water ingestion, fish consumption, and bioconcentration) to derive the individual criteria values. The DDBP Rule that determined the MCL for total THMs - a composite value for all four THMs combined - was based on a weight-of-evidence approach that considered the available toxicological data, known epidemiological information on the incidence of disease associated with chlorinated drinking water (i.e., morbidity rates), information on the relative proportions and uncertainties in the composition of total THMs (including regional and seasonal variation, as well as other variables and their uncertainties) and technological feasibility. The MCLs were the output of an extensive "regulatory negotiation" between EPA and stakeholders. The approach used in the DDBP Rule is vastly different from the ambient water quality criteria calculations used for the CTR. Additionally, the water quality criteria derivations are health-based values only, whereas the MCLs include consideration of economic and feasibility issues, as was the case with the DDBP regulatory negotiation.

Regarding the commenter's concern for the periodic "dewatering" of utility lines, refer to the response to CTR-020-018.

Comment ID: CTR-026-003b
Comment Author: Cal. Department of Fish & Game
Document Type: State Government
State of Origin: CA
Represented Org:
Document Date: 09/25/97
Subject Matter Code: C-17a Methodologies Human Health
References:
Attachments? N
CROSS REFERENCES C-17b

Comment: 3 . TOXICITY DATABASE USED TO DEVELOP CRITERIA

The CTR indicates that the criteria being proposed are based upon a review of the most recent literature and toxicity data bases. The DFG is concerned that the databases utilized by EPA may not be as comprehensive as they could be with respect to inclusion of toxicity studies on a wide variety indigenous species found in State waters. Furthermore, data included in such databases such as EPA's AQUIRE have been found, in some instances, to be less than acceptable. Obviously we would like to see the criteria based on the most recent and scientifically sound toxicity data available. The DFG believes that it would be beneficial to describe in more detail the literature and databases utilized by EPA in development of the proposed criteria.

Also a discussion on appropriate and acceptable methodologies for data collection needs to be provided. It is not only important that the databases utilized by EPA be as comprehensive as possible, with respect to the inclusion of toxicity studies on a wide variety of indigenous species found in State waters. It is also important to know how the data was developed so that it won't be misinterpreted. For example, DFG would prefer using data that was derived from sampling whole organisms rather than edible filets if

we were looking at bioaccumulation, biomagnification, or other types of food chain issues. Most predators don't limit their diet to only the edible portions of a prey organism. Sampling only the edible portions of an organism could lead to faulty conclusions.

Finally, with regards to the development of chronic toxicity standards or criteria based on a straight percentage of the determined acute toxicity level, we would like to participate in any process that attempts to establish chronic levels in that manner.

Response to: CTR-026-003b

Regarding the comment on comprehensive evaluation of toxicity data, refer to the response to CTR-026-003a. Regarding the comment on sampling, edible portions are relevant when deriving human health criteria. Therefore, the practice of sampling edible filets is appropriate. The commenter's statement on the use of whole organisms because "most predators don't limit their diet to only the edible portions of a prey organism" is not relevant because the aquatic life criteria derivation process does not rely on the use of BCFs.

Comment ID: CTR-026-007b
Comment Author: Cal. Department of Fish & Game
Document Type: State Government
State of Origin: CA
Represented Org:
Document Date: 09/25/97
Subject Matter Code: C-17a Methodologies Human Health
References:
Attachments? N
CROSS REFERENCES C-14

Comment: 7. HUMAN HEALTH CRITERIA

As you are aware the Department of Fish and Game is the trustee for the natural resources of the State and, as such we are not in an appropriate position to address human health issues. However, we would like to take this opportunity to make EPA aware of our concerns in two areas. The first issue deals with one component of the formula that was used to derive the human health criteria. Obviously, the human health criteria takes into account fish consumption rates, as well as what portion of the fish is consumed. The CTR indicates that the consumption rate utilized was 6.5 grams per day of fish tissue. This consumption rate, at least for the portion of the population that are subsistence fishermen, appears to be very low. If the human health criteria is to be adequately protective, this consumption rate should be revisited and a new rate developed to better protect these fishermen. Our second comment deals with the proposal to base criteria on fish tissue as opposed to water concentration. The DFG does not have a position with respect to this approach except to point out that compliance monitoring for fish tissue criteria may impact resources. This approach would mean an increased number of fish being collected for monitoring purposes which may impact fish resources. It may also impact the DFG's fiscal resources since we regulate scientific collection activity under which fish monitoring would fall.

Response to: CTR-026-007b

Regarding the issue of fish consumption, refer to the response to CTR-002-002a on this same issue.

Regarding the issue of basing the criteria on fish tissue versus water column concentrations, refer to the response to CTR-020-004b on this same issue.

Comment ID: CTR-029-002a
Comment Author: Center for Marine Conservation
Document Type: Environmental Group
State of Origin: CA
Represented Org:
Document Date: 09/25/97
Subject Matter Code: C-17a Methodologies Human Health
References:
Attachments? N
CROSS REFERENCES C-17b
A
C-22
C-27
C-29

Comment: The Center for Marine Conservation (CMC) is a nationwide, nonprofit advocacy group dedicated to the conservation and enhancement of coastal and ocean life and resources. CMC submits these comments on behalf of its 16,000 members in California and over 120,000 members nationwide.

CMC applauds EPA's efforts to bring California into compliance with the Clean Water Act 303(c)(2)(B). Implementing numeric criteria that will protect the beneficial uses of California's waters is of great importance to the health of coastal and marine ecosystems, and so to CMC and its members. The reliance in many areas of the state on narrative criteria threatens the health of most of the state's waters, thereby impacting both human health and the health of the state's economy that relies on clean water.

While CMC strongly supports the swift adoption of an Enclosed Bays and Estuaries Plan and an Inland Surface Waters Plan that contain numeric criteria for toxic pollutants, CMC also is concerned that many of the specific criteria contained in the proposed rule are weaker than those contained in published guidance. CMC also believes that the proposed rule can better protect certain subpopulations from harm caused by consumption of contaminated fish and shellfish. Finally, CMC is concerned that the economic analysis of the proposed rule over-emphasizes costs and under-reports the many benefits of improving water. quality throughout the state. These three points are reviewed below.

In Light of Significant Threats to Water Quality, the Proposed Rule Should Contain the Most Stringent Criteria That Are Scientifically Defensible

Many of the criteria in the proposed rule are weaker than criteria in current published guidance. The proposed rule summarily states that the difference between the proposed, weaker criteria and the published guidance documents is "insignificant"(*4); however, in light of the current contamination problems in California's waters today, any move backwards, particularly when spread out over the state, must be viewed as significant.

Any weakening of the criteria should be subject to close scrutiny and the most rigorous analysis, which the proposed rule itself does not do. Among other things, the criteria in the proposed rule may be under protective because additive and synergistic effects were not considered; and because the effects on

wildlife, which can be particularly significant for bioaccumulative chemicals, were ignored.(*5) In addition, the proposed rule contains dissolved rather than total recoverable metals criteria, despite the fact that EPA acknowledges that total recoverable metals criteria are "scientifically defensible" and that they are more protective than dissolved metals criteria because they consider "sediment, food-chain effects and other fate-related issues," rather than simply water column impacts.(*6)

Clean Water Act section 303(c)(2)(B) mandates the development of numeric criteria that will "support such designated uses [that are adopted by the State]." The statistics available on the health of the state's waters indicates that their use already is significantly threatened or impaired by toxics. The strongest. criteria supportable by science are necessary to reverse this trend and begin to restore the state's waters.

(*4) 62 Fed. Reg. 42159, 42168 (Aug. 5, 1997).

(*5) Id. at 42168.

(*6) Id. at 42172.

Response to: CTR-029-002a

Regarding the evaluation and protectiveness of the proposed criteria, the commenter states that many of the criteria in the proposed rule "are weaker than those contained in published guidance." However, EPA has updated its national criteria guidance from that previously published. The values proposed in the CTR are a part of that update and, therefore, there is now consistency with all criteria values [see 63 FR 68353-68364 (December 10, 1998)]. Regarding the issue of fish consumption, refer to the response to CTR-002-002a on this same issue.

Comment ID: CTR-031-002b
Comment Author: Fresno Metro. Flood Ctrl Dist.
Document Type: Flood Ctrl. District
State of Origin: CA
Represented Org:
Document Date: 09/25/97
Subject Matter Code: C-17a Methodologies Human Health
References: Letter CTR-031 incorporates by reference letter CTR-027
Attachments? N
CROSS REFERENCES F
C-17b
J
V

Comment: 2. Since the preamble implies that CTR criteria may be applied in NPDES permits for municipal storm water dischargers as numeric effluent limitations, the proposed rule is flawed with regard to: a) setting attainable, scientifically valid criteria in a manner consistent with state and federal regulatory approaches; b) assessing the potential economic impact on the public served by municipal storm water dischargers; c) assessing environmental impacts pursuant to the National Environmental Policy Act and the Endangered Species Act; and d) providing for the coordinated review and evaluation of the proposed CTR in conjunction with the proposed State Implementation Plan. y

Response to: CTR-031-002b

With respect to comments about municipal stormwater discharges see response to CTR-013-003 (Category J; Stormwater Economics).

With respect to comments about the Endangered Species Act see response to CTR-031-002e (Category V; Collaborative Approach).

With respect to the comment about coordination with the State Implementation Plan see response to CTR-031-008b (Category V; Collaborative Approach).

Comment ID: CTR-031-004a
Comment Author: Fresno Metro. Flood Ctrl Dist.
Document Type: Flood Ctrl. District
State of Origin: CA
Represented Org:
Document Date: 09/25/97
Subject Matter Code: C-17a Methodologies Human Health
References: Letter CTR-031 incorporates by reference letter CTR-027
Attachments? N
CROSS REFERENCES C-17b
I

Comment: If the proposed rule is carefully and sufficiently modified to affirm a commitment by EPA to effect only its Congressional authorization as established by CWA section 402(p), then EPA's failure to assess municipal storm water dischargers" ability to attain the proposed standards and associated economic and environmental impacts may be set aside at this time. However, if EPA persists in maintaining the CTR as drafted in this regard, the ambiguities presented in the preamble demand serious consideration and analyses as follows.

a. Many of the criteria are not attainable or scientifically valid with regard to municipal stormwater dischargers, nor is the proposed approach consistent with an appropriate delegation of authority to the State.

ii. Scientific Defensibility of Standards

Municipal storm water discharges require a uniquely different scientific as well as regulatory approach. The episodic nature of storm flow events; the huge variances in flow volume, rate, timing, concentrations, and loads; the variability in receiving waters; and organism tolerance for and recovery f rom episodic exposure need to be taken into account in developing standards.

In a July 1992 memorandum addressing a Combined Sewer Overflow/Wet Weather workshop, Tudor Davies, Director of EPA's Office of Science and Technology wrote: "Changes being considered in the aquatic criteria development methodology to enhance the scientific defensibility of the criteria would be applicable to both constant and to wet weather discharges. One such change undergoing consideration is a change in the duration and frequency of exposure assumptions to make criterion more toxicologically realistic.

EPA has begun this work and is apparently nearing completion. With EPA's own Science and Technology office recognizing the inadequacy of the current approach to setting criteria relative to wet weather discharges, it must be concluded any attempt to apply the CTR criteria to municipal stormwater system discharges is ill-founded and likely inconsistent with the CWA.

Response to: CTR-031-004a

See response to CTR-031-004c.

Comment ID: CTR-037-003b
Comment Author: Hampton Roads Sanitation Dist.
Document Type: Sewer Authority
State of Origin: VA
Represented Org:
Document Date: 09/25/97
Subject Matter Code: C-17a Methodologies Human Health
References:
Attachments? N
CROSS REFERENCES C-17b

Comment: 3. EPA has deleted data from several databases without indicating the reason for the deletions. This introduces the same problem as that described in #2 above, and results in variability in how water quality criteria are developed. Additionally, stakeholders need to know why data is deleted so that these decision criteria can be used in the development of defensible site-specific criteria. EPA should provide their reasoning for deleting data that was once believed acceptable so that this same reasoning can be used to update current criteria and to develop new sound criteria.

Response to: CTR-037-003b

See response to CTR-037-003a (Category C-17b; Methodologies Aquatic Life).

Comment ID: CTR-057-007
Comment Author: City of Los Angeles
Document Type: Local Government
State of Origin: CA
Represented Org:
Document Date: 09/26/97
Subject Matter Code: C-17a Methodologies Human Health
References:
Attachments? N
CROSS REFERENCES

Comment: Organics

In proposing criteria for toxic organic compounds, we urge the EPA to include considerations of net environmental benefit. We see a potential for stringent pollutant limits as a means of influencing

replacements in the service area by other, equally toxic constituents. We have seen this occur to varying extent for chromium, selenium, zinc and molybdenum, and feel that similar instances involving trace organics can occur as well. We support the EPA's intention to evaluate receiving-water background concentrations and provide credit as appropriate.

Response to: CTR-057-007

"Net environmental benefit" is not an appropriate concept for establishing ambient water quality criteria. Ambient water quality criteria, as articulated in CWA Section 304, are supposed to characterize "all identifiable effects" from individual pollutants. See response to CTR-042-007a (Category C-21; Legal Issues). Ambient water quality criteria define the maximum pollutant concentrations allowable in order to maintain a specific designated use. The concept of "net environmental benefit" can be incorporated into other aspects of water quality standards if a State or Tribe so chooses. Designated uses, variances, and antidegradation all allow for the balancing of water quality goals with community priorities. For example, a community may choose to downgrade the designated use for a waterbody to address exceedances of specific chemical criteria because remediation of contaminated sediments (in this case, the source of loading to the water column) through dredging would cause more harm to the biological community through habitat destruction although the chemical concentrations for individual pollutants would decrease as a result. The CTR does not affect California's flexibility with respect to designated uses, variances, and antidegradation.

Comment ID: CTR-065-002b
Comment Author: Environmental Health Coalition
Document Type: Environmental Group
State of Origin: CA
Represented Org:
Document Date: 09/26/97
Subject Matter Code: C-17a Methodologies Human Health
References:
Attachments? N
CROSS REFERENCES A
C-17b

Comment: PROPOSED RULE ALLOWS SIGNIFICANT AND UNACCEPTABLE INCREASES IN TOXIC POLLUTANT CONCENTRATIONS IN BAYS AND ESTUARIES

Our initial review indicates that the proposed criteria for a number of toxic constituents are unacceptably high and will allow more pollution of bays and estuaries by several orders of magnitude. If adopted as proposed, the CTR will allow a 900% increase of dioxin, 140% increase of PCBS, 325% increase of mercury, 2760% increase of zinc, 23,000% increase of lead, and a stunning 430 million % increase for total PAH, some of the most problematic pollutants in San Diego Bay. The CTR only improves (i.e. strengthens) criteria for only 3 of 64 pollutants. This does not square with new studies that show reasons for concern about the synergistic and long-term effects of exposures to these toxic pollutants. In sum, the CTR proposes weaker criteria for 58% of the pollutants and no change for 37% of the criteria. This kind of action will not bring us closer to our goal of cleaner water containing healthier organisms in the future.

Response to: CTR-065-002b

See response to CTR-002-003 (Category C-24; Site-Specific Criteria).

Comment ID: CTR-090-002a
Comment Author: C&C of SF, Public Utl. Commis.
Document Type: Local Government
State of Origin: CA
Represented Org:
Document Date: 09/25/97
Subject Matter Code: C-17a Methodologies Human Health
References: Letter CTR-090 incorporates by reference letters CTR-035 and CTR-054
Attachments? Y
CROSS REFERENCES C-24a
C-22
G-05
G-02
G-04

Comment: There are many features of the proposed rule which we strongly endorse, specifically:

* the use of the latest IRIS values for human health criteria, it is essential that the criteria be based on the latest scientific and environmental information;

* recognition that the dissolved fraction of metals, rather than the total recoverable, better reflect the aquatic toxicity of metals;

* recognition that for certain metals (e.g. copper and zinc) ambient water chemistry is critical in determining toxicity thereby endorsing the Water Effects Ratio;

* recognition and strong endorsement of the multi-tiered mixing zones for acute, chronic and human health effects; and

* recognition of interim limits and compliance schedules as appropriate implementation strategies,

Response to: CTR-090-002a

EPA agrees with the comment and its endorsement of the rule.

Comment ID: CTR-090-019
Comment Author: C&C of SF, Public Utl. Commis.
Document Type: Local Government
State of Origin: CA
Represented Org:
Document Date: 09/25/97
Subject Matter Code: C-17a Methodologies Human Health
References: Letter CTR-090 incorporates by reference letters CTR-035 and CTR-054
Attachments? Y
CROSS REFERENCES

Comment: Human health criteria - p 42175 - Human Health Criteria - These criteria are based on a hypothetical series of events. Each link in the series must be present for the presumed risk to occur at the levels used to set the criteria. The links assumed to be present in the criteria include: (1) Non-degradation in the receiving water - Some regulated pollutants (various PAHs) rapidly break down in receiving waters.

(2) Continued presence in the receiving water at the level of discharge or at the calculated dilution level - Implementation plans and policies give no dilution credit or use very conservative dilution assumptions. As implemented in California, none of the dilution equations take into account far-field effect-, nor the time-averaging effects which in reality typically reduce concentrations to far below those assumed in the risk assessment. The result is as if we assumed that the human endpoint on the risk assessment only ate fish which lived within a few feet of the outfall.

(3) Bioaccumulation in fish or other higher organisms; non-degradation in these organisms - The bioaccumulation assumptions are based on the worst case bioaccumulation encountered in the scientific literature rather than the bioaccumulation actually taking place in commercial species in the waters in question- Not infrequently, tissue samples from food species indicate that less Bioaccumulation is taking place. Another complicating factor is that bioaccumulation factors are derived from steady-state conditions, whereas municipal discharges of chlorinated hydrocarbon carcinogens are usually episodic. Use of steady-state derived water concentration to tissue concentration relationships is especially problematic for wet-weather discharges, as these have durations measured in hours to days, whereas bioconcentration in mature (i.e. legal sized) fish occurs over weeks to months.

(4) Pervasive contamination - Ongoing consumption by humans of contaminated fish (or shellfish) with the level of contamination.

(5) Necessary safety factors - Assumed carcinogenicity or toxicity to humans at 10 or 100 times the frequency experienced by test animals. These safety factors are necessary but their overall effect is to significantly decrease the likely impact of the pollutant (i.e., shift a 10E-6 risk to 10E-7 or 10E-8). EPA's Cancer potency factors are based on an upper bound, i.e. 95 % percentile estimate of the slope.

(6) Non-threshold effects - Carcinogenicity is assumed to have no threshold mechanisms, i.e., there is no low level below which the human body can safely detoxify the carcinogen.

While the use of this chain of events and these assumptions are necessary to identify potential problems, the cumulative uncertainty creates too speculative a result to use for decisions regarding significant expenditures for remedial projects. Better sources of risk information are available, specifically, tissue samples from the organisms presumed to be carrying the risk to humans. What we propose is a three step process prior to controls being mandated for dischargers:

1. numerical criteria to identify potential risks. 2. site specific tissue samples of edible species to identify actual bioaccumulation (as has been done in San Francisco Bay with PCBs and other chemicals). 3. source assessment to determine if prospective controls on point sources provide meaningful reductions.

This approach is within EPA's mandate to set criteria and implement a permit program which meets the goals of the CWA.

San Francisco proposes that the designation of an appropriate level(s) be left to the state in its implementation documents.

Response to: CTR-090-019

EPA disagrees with the commenter that "... bioaccumulation assumptions are based on the worst case bioaccumulation encounter in the scientific literature ...". EPA has and will continue to use the best available science in the selection of the bioaccumulation data for the development of ambient water quality criteria. In the process of selecting bioaccumulation data, all published data are carefully evaluated and bioaccumulation factors are determined using all possible methods. The bioaccumulation data selected in this process for use in the development of water quality criteria represents the best synthesis and consensus of all available scientific information. The commenter also states that "... tissue samples from food species indicate that less bioaccumulation is taking place." However, no supporting information was provided nor were citations from the scientific literature provided. EPA disagrees with the commenter. EPA has and will continue to use the best available science in the selection of the bioaccumulation data for the development of ambient water quality criteria. The commenter further suggests that bioaccumulation factors developed using long term average concentrations in fish and the water are inappropriate for developing ambient water quality criteria for persistent bioaccumulative chemicals. EPA disagrees with the commenter. For human health, EPA uses lifetime consumption rates in setting acceptable doses/exposures for bioaccumulative chemicals and to be consistent with the dose/exposure basis, bioaccumulation factors must be developed using long term average concentrations as well. Regarding the commenter's statements on the chemical degradation of various PAHs, refer to the response to CTR-060-014.

Regarding the commenter's statements on risk assumptions, EPA uses risk methods consistent with published risk assessment guidelines that are available in both EPA reports and peer reviewed literature [e.g., Guidelines for Mutagenicity Assessment (Federal Register, Vol. 51, September 24, 1986), Final Guidelines for Developmental Toxicity Risk Assessment (Federal Register, Vol. 56, December 5, 1991), Integrated Risk Information System (IRIS) - On-line]. EPA acknowledges the commenter's proposed three-step process. When EPA promulgates criteria, it uses CWA Section 304(a) criteria guidance. EPA does not perform site-specific risk assessments; the Agency relies on protective assessments that apply to the nation as a whole. This is consistent with EPA's approach to the National Toxics Rule (NTR), of which this CTR is a part. A State or Tribe has the flexibility to utilize site-specific data when available in its assessments and decision-making process.

Comment ID: CTR-095-001b
Comment Author: M. Ruth Uiswander
Document Type: Citizen
State of Origin: CA
Represented Org:
Document Date: 10/02/97
Subject Matter Code: C-17a Methodologies Human Health
References:
Attachments? N
CROSS REFERENCES C-20
C-21
C-14

Comment: In regard to the numeric water quality standards criteria for California surface water, they have been revealed by environmental groups to be insufficiently protective and environmentally unjust. The proposed new rules assume fish ingestion of 6.5 grams per day. In reality, consumption of fish in some communities can be as high as 1 pound per day. This level of consumption is especially likely among subsistence fishers.

Please prevent toxic pollution in California's bays by making more protective standards that consider all toxic pollutants and consider the fish consumption habits of subsistence anglers.

Response to: CTR-095-001b

Regarding the issue of fish consumption, refer to the response to CTR-002-002a on this same issue.

Comment ID: CTR-097-001a
Comment Author: Mark Shaw
Document Type: Citizen
State of Origin: CA
Represented Org:
Document Date: 10/03/97
Subject Matter Code: C-17a Methodologies Human Health
References:
Attachments? N
CROSS REFERENCES C-14

Comment: I am writing to urge you to more stringent - and more protective - water quality standards for California surface water. The proposed standards are too weak and discriminatory in their effects.

Lastly, the proposed standards are discriminatory in their effects in that they assume consumption of only 6.5 grams of fish per day per person. Many poorer communities catch and eat fish for subsistence - as much as a pound per day per person (more than sixty what the EPA estimates!) placing them at greater risk. The standards should be set to protect everybody, including those who happen to be poor and/or eat a significant amount of fish.

Please set the standards to protect us all and move us closer to the goals of the Clean Water Act, that our waters be safely fishable and swimmable.

Response to: CTR-097-001a

Regarding the issue of fish consumption, refer to the response to CTR-002-002a on this same issue.

Comment ID: CTR-099-001a
Comment Author: Emil A. Lawton, Ph.D.
Document Type: Citizen
State of Origin: CA
Represented Org:
Document Date: 10/03/97
Subject Matter Code: C-17a Methodologies Human Health

References:
Attachments? N
CROSS REFERENCES C-17b

Comment: This letter is to comment on the water quality standards for California surface water. It is my strongly held opinion that the proposed standards do not meet the minimum legal requirements of protecting health, let alone other aspects of the environment. The numbers should be adjusted to lower MAC's by roughly an order of magnitude.

Response to: CTR-099-001a

EPA disagrees. EPA believes that the criteria are fully protective of aquatic life and human health. The comment offers no evidence that the criteria are not protective.

Comment ID: CTR-102-001a
Comment Author: Bryan Gordon
Document Type: Citizen
State of Origin: CA
Represented Org:
Document Date: 10/10/97
Subject Matter Code: C-17a Methodologies Human Health
References:
Attachments? N
CROSS REFERENCES C-17b

Comment: Please ensure that the Federal water quality standards provide the maximum protection for people as well as the animals that inhabit our state's waterways.

Thank you for protecting America's waterways and the Americans and American animals that come into contact with them.

Response to: CTR-102-001a

EPA acknowledges the comment.

Comment ID: CTR-104-004b
Comment Author: Lucy Nelson, et. al.
Document Type: Citizen
State of Origin: CA
Represented Org:
Document Date: 10/15/97
Subject Matter Code: C-17a Methodologies Human Health
References:
Attachments? N
CROSS REFERENCES C-09a

Comment: Increasing the limits on toxins means that we postpone the goals of the Clean Water Act to make U.S. water "fishable and swimmable". Any progress made will not be expanded toward making our waters cleaner and mediocre programs will be introduced which do not improve the condition of our state's water quality. More protective standards must be created which will consider all 17 toxic pollutants of concern.

Response to: CTR-104-004b

See response to CTR-016-008.

Comment ID: CTR-105-002a
Comment Author: Heather Catherine Park Tausig
Document Type: Citizen
State of Origin: CA
Represented Org:
Document Date: 10/13/97
Subject Matter Code: C-17a Methodologies Human Health
References:
Attachments? N
CROSS REFERENCES C-21

Comment: The maximum levels proposed for mercury, dioxin, and thirteen other pollutants have been identified by respected environmental advocacy groups as (1) insufficiently protective, and (2) environmentally unjust, potentially increasing the cancer risks for subsistence fishers, who are, in large part, people of color.

The standards must be established at a level that makes California waters truly "fishable," and not just "fishable if you don't object to cancer."

Thank you for your consideration.

Response to: CTR-105-002a

See response to CTRH-001-010 (Category C-21; Legal Concerns).

Comment ID: CTR-106-004b
Comment Author: Robert Brown
Document Type: Citizen
State of Origin: CA
Represented Org:
Document Date: 10/28/97
Subject Matter Code: C-17a Methodologies Human Health
References:
Attachments? N
CROSS REFERENCES C-09a

Comment: Increasing the limits on toxins means that we postpone the goals of the Clean Water Act to make U.S. water "fishable and swimmable". Any progress made will not be expanded toward making our waters cleaner and mediocre programs will be introduced which do not improve the condition of our state's water quality. More protective standards must be created which will consider all 17 toxic pollutants of concern.

Response to: CTR-106-004b

See response to CTR-016-008.

Comment ID: CTR-110-001
Comment Author: Judith A. Brown
Document Type: Citizen
State of Origin: CA
Represented Org:
Document Date: 12/02/97
Subject Matter Code: C-17a Methodologies Human Health
References:
Attachments? N
CROSS REFERENCES

Comment: I have recently been reading about some proposed new quality standards for pollutants of California surface waters. I feel very concerned about these proposed standards, as they appear to be more lenient toward pollutants than the existing regulations. I believe very strongly that our surface water is of serious concern to the millions of Californians who use this water every day. In particular, to children and elderly who are more vulnerable to toxins. There is growing evidence that water pollutants lead to cancer and other serious illnesses. I urge you to create more protective standards for our water. The people of this country are being exposed to potentially serious harm by toxicities in our water supply and I hope that more stringent standards can and will be implemented.

Thank you for allowing me to express my concern.

Response to: CTR-110-001

See response to CTR-002-003 (Category C-24; Site-Specific Criteria).

Comment ID: CTRH-001-024e
Comment Author: Michelle Pla
Document Type: Public Hearing
State of Origin: CA
Represented Org: S.F. Public Utilities Com
Document Date: 09/17/97
Subject Matter Code: C-17a Methodologies Human Health
References:
Attachments? N
CROSS REFERENCES g-02
g-05

c-22
c-24a

Comment: MS. PLA: My name is Michelle Pla. I'm with the Public Utilities Commission, City and County of San Francisco.

I made the comment on my card that I also said that I would try to be constructive, and so I'm going to follow my mentor here, Phil Bobel, and say that there are some things in this rule that we're very pleased to see.

We're very pleased to see use of the latest scientific information, particularly the use of latest IRIS, I-R-I-S, numbers-for human health. We're very pleased that you're using dissolved versus total recoverable form for the metals.

We're very pleased to see recognition of the water effects ratios. We're pleased to see recognition for a multi-tiered mixing zone for acute and chronic human health effects and hope that the state pays particular attention to that.

We do have a problem with the way you've described compliance schedules and hope to be working strictly by the state on that as well. We think that the five-year system is fairly shortsighted, and -we can't even do FMDSLs in five years.

Response to: CTRH-001-024e

EPA acknowledges the commenter's support for the aspects of the rule mentioned in the comment. With respect to compliance schedules, see response to CTR-002-010b (Category G-02; Compliance Schedules).

Subject Matter Code: C-17b Methodologies Aquatic Life

Comment ID: CTR-002-004b
Comment Author: Comm. for a Better Environment
Document Type: Environmental Group
State of Origin: CA
Represented Org:
Document Date: 09/24/97
Subject Matter Code: C-17b Methodologies Aquatic Life
References:
Attachments? Y
CROSS REFERENCES C-17a

Comment: B. The criteria do not control pollution that harms fishing, and aquatic life.

Adoption of EPA's proposed criteria values will result in less control of toxic pollutants that exceed state criteria values in large parts of San Francisco Bay. Examples of this problem are shown in tables 3 through 6 for mercury, copper, nickel and PAH measured in 1995 at monitoring stations shown on a map of San Francisco Bay (Figure 1). The EPA-proposed criteria would allow:

- mercury violations triggered by state criteria values through much of the northern reach of the Bay. EPA-proposed criteria trigger violations only at the Petaluma river mouth and in South Bay). Bay-wide, 8 of 15 state criteria-triggered violations (53%) are allowed by EPA criteria.

- copper violations triggered by state criteria (4.9 ug/L total) throughout the northern reach of the Bay. EPA'S 3.1 ug/L dissolved value triggers violations only in the Petaluma river and in' South Bay. Bay-wide, 15 of 25 state-triggered violations (60%) are allowed by EPA criteria,

- nickel violations triggered by state criteria throughout most of the northern and southernreaches of the Bay. EPA's 8.2 ug/L dissolved value triggers violations at the Petaluma river mouth and one South Bay slough. Bay-wide, 20 of the 22 water quality standards violations (91%) triggered by the 7.1 ug/L criterion are allowed by EPA criteria,

- PAH violations triggered by state criteria at Coyote Creek and the Petaluma River mouth, EPA-proposed criteria trigger 4 violations for benzo(a)pyrene and indeno(1,2,3-cd)pyrene while state criteria trigger 40 violations for these compounds and 6 other PAHS.

Though EPA criteria do not control mercury except at the Petaluma River and in South Bay, a state human health advisory cites mercury contamination,(*6) and demonstrates that mercury restricts fishing uses Bay-wide. A severe threat and possible harm to aquatic life of the Bay's entire southern reach is evidenced by reduced abundance of all species known to be most vulnerable to copper toxicity, while these same species thrive in otherwise similar estuaries with less copper and nickel pollution.(*1) (*2) EPA criteria do not control copper and nickel in most of this area. Nor do EPA criteria control PAHs which -- with PCBs -- cause toxic effects in starry flounder in Central Bay.(*4)

Further, EPA'S proposed criteria include no criteria for 16 dioxin compounds that are included in the state dioxin criterion for TCDD equivalents.(*10) (*21) These 16 compounds are 6 dibenzo-paradioxins chlorinated in the 2,3,7, and 8 positions (except for 2,3,7,8-TCDD which is included in the EPA criterion), and 10 dibenzofurans chlorinated in the 2,3,7 and 8 positions. Under the state criteria, these 16

compounds and 2,3,7,8-TCDD are assigned toxicity equivalence factors as discussed in the proposed rule. Under the state criterion all these compounds are limited: if only 2,3,7,8-TCDD is present it cannot exceed 0.014 pg/L; if only OCDD is present it cannot exceed 14 pg/L; and if a mixture of dioxins is present the sum of their toxicities cannot exceed 0.014 pg/L. By failing to use toxicity equivalents and then failing to propose separate criteria for these 16 compounds, EPA is essentially deregulating 16 of the most toxic chemicals known to science even though these dioxins harm fishing uses, as shown by the health advisory discussed above. (*6)

The EPA criteria do not control toxics that threaten and harm the Bay, fishing and public health.

(*1) U.S. Geological Survey, 1992. Letter from Samuel N. Luoma, Ph.D., to Seven R. Ritchie, Executive Officer, Regional Water Quality Control Board. August 24, 1992.
(*2) Karras, 1992. Comparison of copper in waters of the southern reach of San Francisco Bay and ten other estuaries. Communities for a Better Environment (CBE). July, 1992.
(*4) Spies et al., (2 papers), 1988: Effects of organic contaminants on reproduction of the starry flounder Platichthys stellatus in San Francisco Bay, I., Hepatic contamination and mixed-function oxidase (MFO) activity during the reproductive season. Marine Biology 98: 181-189; and II. Reproductive success of fish captured in San Francisco Bay and spawned in the laboratory. Marine Biology 98: 191-200. Excerpt including abstracts.
(*6) Cal. EPA, 1994. Health advisory on catching and eating fish, interim sport fish advisory for San Francisco Bay. December, 1994.
(*10) California State Water Resources Control Board, 1991. California Enclosed Bays and Estuaries Plan; water quality control plan for enclosed bays and estuaries in California. 91-13WQ. April, 1991. Excerpt including adopted water quality criteria and definition of terms.
(*21) California State Water Resources Control Board, 1997. Staff technical report, Division of Water Quality, Petitions of CBE, San Francisco BayKeeper, and Tosco Corporation for review of Order No. 95-138 of the San Francisco Bay Regional Water Quality Control Board. Office of Chief Counsel [OCC File Nos. A-983 and A-983(A)].

Response to: CTR-002-004b

EPA disagrees with the comment. EPA sets its criteria values at concentrations that will protect aquatic life or human health, based on the evaluation of the toxicity of the pollutants. Aquatic life criteria are expected to protect at least 95 percent of all genera, based on prediction from measured toxicological values. EPA's approach is a longstanding policy; EPA has used this approach to deriving aquatic life criteria since 1980. Criteria concentrations are not selected either to match existing concentrations in particular California waterbodies, or match criteria concentrations previously used by the state.

EPA does not believe that the information provided by the comment can be used reasonably to evaluate whether criteria concentrations protect aquatic life uses. Whether EPA's criteria are higher or lower than criteria previously used by the state are not germane to whether EPA's criteria protect aquatic life uses.

The observations that certain aquatic taxa are impaired in South Bay cannot validly be interpreted to indicate whether EPA's criteria are or are not protective. The cause or causes of impairment in South Bay are in fact not known. The concentrations of many contaminants are correlated with each other and with other occurrence of other stresses. Because of the presence of so many confounding factors, the information on South Bay cannot be used to derive criteria or to judge their validity.

EPA did not derive its criteria concentrations by considering whether the existing concentrations in

particular California waterbodies would or would not attain criteria concentrations. Rather EPA derived its criteria from toxicity data indicating that concentrations that are necessary to protect aquatic life. The comment offers no definitive toxicological or ecological evidence that the criteria are not protective.

The preamble discusses why the only dioxin compound included in the rule is 2,3,7,8-TCDD, which is the only dioxin compound that is a priority pollutant.

Comment ID: CTR-026-002a
Comment Author: Cal. Department of Fish & Game
Document Type: State Government
State of Origin: CA
Represented Org:
Document Date: 09/25/97
Subject Matter Code: C-17b Methodologies Aquatic Life
References:
Attachments? N
CROSS REFERENCES C-27; C-29

Comment: 2. PARTIAL PROTECTION BY THE PROPOSED AQUATIC LIFE CRITERIA (FRESHWATER OR SALTWATER)

On page 42168, the proposed rule includes the following language: "EPA's guidelines are designed to derive criteria that protect aquatic communities by protecting most of the species and their uses most of the time." The CTR goes on to state that this approach results in only a "small possibility" of substantial overprotection or underprotection. Obviously, it is underprotection that is of concern to the DFG. The DFG has very serious concerns that criteria are being proposed that protect "most" of the species "most" of the time. We are aware of the protocols that require a minimum of eight specified families be used to develop criteria and that it may be difficult to determine criteria that are one hundred percent protective; however, this does not preclude the real possibility that certain designated uses and aquatic organisms will not be maintained, and or protected, as a result of the proposed criteria. The DFG is also concerned that criteria and protocols developed for specific constituents do not take into account the additive or synergistic effects that contaminant combination may have on aquatic organisms. Another factor that needs to be considered is bioaccumulation, as well as the effect this may have on organisms at higher trophic levels.

As trustee of all the fish and wildlife resources in the State, it is our agency's responsibility to ensure appropriate protection of all fish and wildlife resources, not just "most", and this includes adequate water quality standards. Due to our concerns and the very real possibility of underprotection to aquatic organisms and designated uses, the DFG believes that it may be appropriate to derive the criteria as proposed, and subsequently develop some additional safety factors for inclusion. It is our understanding that this approach was used in the formulation of water quality objectives for protection of aquatic organisms in the California Ocean Plan. In the short term, the safety factor could possibly be realized by the development of a comprehensive biological monitoring program to determine whether the proposed criteria are indeed fully protective.

Response to: CTR-026-002a

EPA disagrees with the comment. EPA believes that incorporating the type of safety factor requested in

the comment would be arbitrary and would be difficult to defend scientifically. In particular EPA does not believe such a safety factor could be defended as being necessary for the protection of aquatic life. The commenter provides no data demonstrating that the criteria do not protect aquatic life.

The phrase "most of the species...most of the time" generally means a high percentage of species, a very high percentage of time. Aquatic life criteria are expected to protect at least 95 percent of all genera, based on prediction from measured toxicological values. In most streams, the duration and frequency goals result in attainment of criteria more than 99 percent of time. Past application of aquatic life criteria indicate that this level of protection will protect all aquatic life uses of a waterbody. Considering the variability of natural stresses on all species in a waterbody, EPA can find no basis in data or analysis for a concern that its goals for criteria concentrations and attainment time would not protect aquatic life uses. Because EPA's aquatic life criteria are derived using an appropriately conservative methodology, there is no need to develop the safety factors suggested by the comment.

See response to CTR-026-002b for discussion of the additive or synergistic concerns.

Comment ID: CTR-026-003a
Comment Author: Cal. Department of Fish & Game
Document Type: State Government
State of Origin: CA
Represented Org:
Document Date: 09/25/97
Subject Matter Code: C-17b Methodologies Aquatic Life
References:
Attachments? N
CROSS REFERENCES C-17a

Comment: 3 . TOXICITY DATABASE USED TO DEVELOP CRITERIA

The CTR indicates that the criteria being proposed are based upon a review of the most recent literature and toxicity data bases. The DFG is concerned that the databases utilized by EPA may not be as comprehensive as they could be with respect to inclusion of toxicity studies on a wide variety indigenous species found in State waters. Furthermore, data included in such databases such as EPA's AQUIRE have been found, in some instances, to be less than acceptable. Obviously we would like to see the criteria based on the most recent and scientifically sound toxicity data available. The DFG believes that it would be beneficial to describe in more detail the literature and databases utilized by EPA in development of the proposed criteria.

Also a discussion on appropriate and acceptable methodologies for data collection needs to be provided. It is not only important that the databases utilized by EPA be as comprehensive as possible, with respect to the inclusion of toxicity studies on a wide variety of indigenous species found in State waters. It is also important to know how the data was developed so that it won't be misinterpreted. For example, DFG would prefer using data that was derived from sampling whole organisms rather than edible filets if we were looking at bioaccumulation, biomagnification, or other types of food chain issues. Most predators don't limit their diet to only the edible portions of a prey organism. Sampling only the edible portions of an organism could lead to faulty conclusions.

Finally, with regards to the development of chronic toxicity standards or criteria based on a straight

percentage of the determined acute toxicity level, we would like to participate in any process that attempts to establish chronic levels in that manner.

Response to: CTR-026-003a

The derivation of each aquatic life criteria concentration is explained in detail in the criteria documents and in the 1995 update document, all of which were publicly available. This information was not repeated in the preamble of the proposed rule.

EPA does not agree with the comment about the comprehensiveness of the toxicity database. At the time the criterion document for each pollutant was developed, a comprehensive search of the literature was performed. The comment has offered no literature citations that EPA missed. Regarding the comment on the database AQUIRE, this database was never intended to include only the data that EPA would use for criteria development. EPA agrees that for purposes of developing criteria, some of the data in AQUIRE is "less than acceptable." However, EPA would not and has not used such data in development of the rule's criteria.

Bioaccumulation factors developed from data on edible portions of aquatic organisms have been used in criteria designed to prevent the edible portions of fish or shellfish from exceeding FDA action levels, and to prevent human health risks.

EPA encourages the commenter to participate in State adoption of water quality objectives, which after approval, would supersede these federal criteria.

Comment ID: CTR-029-002b
Comment Author: Center for Marine Conservation
Document Type: Environmental Group
State of Origin: CA
Represented Org:
Document Date: 09/25/97
Subject Matter Code: C-17b Methodologies Aquatic Life
References:
Attachments? N
CROSS REFERENCES C-17a; A; C-22; C-27; C-29

Comment: The Center for Marine Conservation (CMC) is a nationwide, nonprofit advocacy group dedicated to the conservation and enhancement of coastal and ocean life and resources. CMC submits these comments on behalf of its 16,000 members in California and over 120,000 members nationwide.

CMC applauds EPA's efforts to bring California into compliance with the Clean Water Act 303(c)(2)(B). Implementing numeric criteria that will protect the beneficial uses of California's waters is of great importance to the health of coastal and marine ecosystems, and so to CMC and its members. The reliance in many areas of the state on narrative criteria threatens the health of most of the state's waters, thereby impacting both human health and the health of the state's economy that relies on clean water.

While CMC strongly supports the swift adoption of an Enclosed Bays and Estuaries Plan and an Inland Surface Waters Plan that contain numeric criteria for toxic pollutants, CMC also is concerned that many of the specific criteria contained in the proposed rule are weaker than those contained in published

guidance. CMC also believes that the proposed rule can better protect certain subpopulations from harm caused by consumption of contaminated fish and shellfish. Finally, CMC is concerned that the economic analysis of the proposed rule over-emphasizes costs and under-reports the many benefits of improving water. quality throughout the state. These three points are reviewed below.

In Light of Significant Threats to Water Quality, the Proposed Rule Should Contain the Most Stringent Criteria That Are Scientifically Defensible

Many of the criteria in the proposed rule are weaker than criteria in current published guidance. The proposed rule summarily states that the difference between the proposed, weaker criteria and the published guidance documents is "insignificant"(*4); however, in light of the current contamination problems in California's waters today, any move backwards, particularly when spread out over the state, must be viewed as significant.

Any weakening of the criteria should be subject to close scrutiny and the most rigorous analysis, which the proposed rule itself does not do. Among other things, the criteria in the proposed rule may be underprotective because additive and synergistic effects were not considered; and because the effects on wildlife, which can be particularly significant for bioaccumulative chemicals, were ignored.(*5) In addition, the proposed rule contains dissolved rather than total recoverable metals criteria, despite the fact that EPA acknowledges that total recoverable metals criteria are "scientifically defensible" and that they are more protective than dissolved metals criteria because they consider "sediment, food-chain effects and other fate-related issues," rather than simply water column impacts.(*6)

Clean Water Act section 303(c)(2)(B) mandates the development of numeric criteria that will "support such designated uses [that are adopted by the State]." The statistics available on the health of the state's waters indicates that their use already is significantly threatened or impaired by toxics. The strongest criteria supportable by science are necessary to reverse this trend and begin to restore the state's waters.

(*4) 62 Fed. Reg. 42159, 42168 (Aug. 5, 1997).
(*5) Id. at 42168.
(*6) Id. at 42172.

Response to: CTR-029-002b

EPA disagrees with the comment, with respect to incorporation of weaker criteria. EPA incorporated its latest criteria values into the proposed and final rule. EPA believes that these criteria are fully protective, and are the most scientifically defensible available at this time. The commenter offers no evidence that these criteria are not protective.

EPA disagrees with the assertion that "EPA acknowledges that total recoverable metals criteria...consider sediment, food-chain effects and other fate-related issues." The preamble to the proposed rule (62 FR 42172) has no such acknowledgment. Total recoverable metals criteria do not consider sediment, food-chain, or fate. Rather, EPA has acknowledged that a state may consider such factors in risk management decisions affecting water quality programs and standards. See also response to CTR-26-004.

See response to CTR-026-002b regarding additive or synergistic issues.

Comment ID: CTR-031-002c
Comment Author: Fresno Metro. Flood Ctrl Dist.
Document Type: Flood Ctrl. District
State of Origin: CA
Represented Org:
Document Date: 09/25/97
Subject Matter Code: C-17b Methodologies Aquatic Life
References: Letter CTR-031 incorporates by reference letter CTR-027
Attachments? N
CROSS REFERENCES F; C-17a; J; V

Comment: 2. Since the preamble implies that CTR criteria may be applied in NPDES permits for municipal storm water dischargers as numeric effluent limitations, the proposed rule is flawed with regard to: a) setting attainable, scientifically valid criteria in a manner consistent with state and federal regulatory approaches; b) assessing the potential economic impact on the public served by municipal storm water dischargers; c) assessing environmental impacts pursuant to the National Environmental Policy Act and the Endangered Species Act; and d) providing for the coordinated review and evaluation of the proposed CTR in conjunction with the proposed State Implementation Plan.

Response to: CTR-031-002c

EPA disagrees with item a). The commenter offers no evidence to support this alleged flaw.

Comment ID: CTR-031-004b
Comment Author: Fresno Metro. Flood Ctrl Dist.
Document Type: Flood Ctrl. District
State of Origin: CA
Represented Org:
Document Date: 09/25/97
Subject Matter Code: C-17b Methodologies Aquatic Life
References: Letter CTR-031 incorporates by reference letter CTR-027
Attachments? N
CROSS REFERENCES C-17a; I

Comment: If the proposed rule is carefully and sufficiently modified to affirm a commitment by EPA to effect only its Congressional authorization as established by CWA section 402(p), then EPA's failure to assess municipal storm water dischargers" ability to attain the proposed standards and associated economic and environmental impacts may be set aside at this time. However, if EPA persists in maintaining the CTR as drafted in this regard, the ambiguities presented in the preamble demand serious consideration and analyses as follows.

a. Many of the criteria are not attainable or scientifically valid with regard to municipal stormwater dischargers, nor is the proposed approach consistent with an appropriate delegation of authority to the State.

ii. Scientific Defensibility of Standards

Municipal storm water discharges require a uniquely different scientific as well as regulatory approach.

The episodic nature of storm flow events; the huge variances in flow volume, rate, timing, concentrations, and loads; the variability in receiving waters; and organism tolerance for and recovery from episodic exposure need to be taken into account in developing standards.

In a July 1992 memorandum addressing a Combined Sewer Overflow/Wet Weather workshop, Tudor Davies, Director of EPA's Office of Science and Technology wrote: "Changes being considered in the aquatic criteria development methodology to enhance the scientific defensibility of the criteria would be applicable to both constant and to wet weather discharges. One such change undergoing consideration is a change in the duration and frequency of exposure assumptions to make criterion more toxicologically realistic.

EPA has begun this work and is apparently nearing completion. With EPA's own Science and Technology office recognizing the inadequacy of the current approach to setting criteria relative to wet weather discharges, it must be concluded any attempt to apply the CTR criteria to municipal stormwater system discharges is ill-founded and likely inconsistent with the CWA.

Response to: CTR-031-004b

EPA agrees that the specified numeric criteria concentrations, chronic averaging period, and allowable frequency may not be completely appropriate for every possible application of each criterion. For this reason, the proposed and final rules incorporate provisions for the Water-Effect Ratio for modifying the criteria concentrations for site-water conditions. The final rule also incorporates a provision that the State of California, with EPA approval, after public notice and comment, may use alternative, scientifically defensible, averaging periods and allowable frequencies. When the numeric values are coupled with these provisions, EPA believes that the rule provides criteria that are fully applicable to all types of discharges, including storm water where appropriate.

Comment ID: CTR-037-002
Comment Author: Hampton Roads Sanitation Dist.
Document Type: Sewer Authority
State of Origin: VA
Represented Org:
Document Date: 09/25/97
Subject Matter Code: C-17b Methodologies Aquatic Life
References:
Attachments? N
CROSS REFERENCES

Comment: 2. EPA has used its 1985 Guidelines to develop the criteria designed to protect aquatic life and its uses proposed in this rule. However, EPA has used new decision criteria in this rule that are not part of the 1985 Guidelines or any addendum of the Guidelines. Examples include the use of test results where measured concentrations were reported rather than for tests where concentrations were not reported, regardless of whether the test was flow through; and the use of the lowest SMAV or SMCV as the GMAV or GMCV when SMAVs or SMCVs varied by more than a factor of five within a genus. EPA should not be "making the rules up as they go" and should be amending the Guidelines as changes are necessary. Changes to the methods used to develop criteria must be made public in an organized fashion to facilitate consistent development of criteria across the country. EPA may find that if these new decision criteria were applied to all criteria that they too would change. Changes to the Guidelines

without formal documentation introduces too much variability into the water quality criteria program and does not insure that all regulatory agencies will acknowledge and implement the changes. EPA should follow the Guidelines that they have developed until new methods are available.

Response to: CTR-037-002

EPA agrees that the derivation of some of the criteria for the rule used certain decision criteria that were not part of the 1985 Guidelines. These included a preference for results from flow-through tests with measured concentrations, and setting the GMAV at the lowest SMAV where SMAVs differ by more than a factor of five. These decision criteria are used in the derivation of the GLI criteria, although they are also not part of the GLI Guidelines (40 CFR 132). EPA believes that the preference for flow-through measured tests is reasonable because the toxicant exposure has greater certainty in such tests. Provided that experimental variability had little to do with accounting for observed differences in SMAVs, then setting the GMAV equal to the lowest SMAV might likewise be reasonable, if the intent were to protect all tested species within the genus in such situations. These changes do not constitute changes to the national Guidelines. EPA believes that it is not bound by the 1985 Guidelines where there is a reasonable scientific basis for deviating from the Guidelines.

Comment ID: CTR-037-003a
Comment Author: Hampton Roads Sanitation Dist.
Document Type: Sewer Authority
State of Origin: VA
Represented Org:
Document Date: 09/25/97
Subject Matter Code: C-17b Methodologies Aquatic Life
References:
Attachments? N
CROSS REFERENCES C-17a

Comment: 3. EPA has deleted data from several databases without indicating the reason for the deletions. This introduces the same problem as that described in #2 above, and results in variability in how water quality criteria are developed. Additionally, stakeholders need to know why data is deleted so that these decision criteria can be used in the development of defensible site-specific criteria. EPA should provide their reasoning for deleting data that was once believed acceptable so that this same reasoning can be used to update current criteria and to develop new sound criteria.

Response to: CTR-037-003a

EPA disagrees. The commenter did not identify particular data that were at issue. EPA believes that the derivation of criteria was fully explained in the 1995 Updates and in the original criteria documents, both of which were included in the public record for the proposed rule.

Comment ID: CTR-065-002c
Comment Author: Environmental Health Coalition
Document Type: Environmental Group
State of Origin: CA
Represented Org:

Document Date: 09/26/97
Subject Matter Code: C-17b Methodologies Aquatic Life
References:
Attachments? N
CROSS REFERENCES A; C-17a

Comment: PROPOSED RULE ALLOWS SIGNIFICANT AND UNACCEPTABLE INCREASES IN TOXIC POLLUTANT CONCENTRATIONS IN BAYS AND ESTUARIES

Our initial review indicates that the proposed criteria for a number of toxic constituents are unacceptably high and will allow more pollution of bays and estuaries by several orders of magnitude. If adopted as proposed, the CTR will allow a 900% increase of dioxin, 140% increase of PCBS, 325% increase of mercury, 2760% increase of zinc, 23,000% increase of lead, and a stunning 430 million % increase for total PAH, some of the most problematic pollutants in San Diego Bay. The CTR only improves (i.e. strengthens) criteria for only 3 of 64 pollutants. This does not square with new studies that show reasons for concern about the synergistic and long-term effects of exposures to these toxic pollutants. In sum, the CTR proposes weaker criteria for 58% of the pollutants and no change for 37% of the criteria. This kind of action will not bring us closer to our goal of cleaner water containing healthier organisms in the future.

Response to: CTR-065-002c

EPA disagrees. EPA did not derive its criteria concentrations with the intent of matching existing concentrations in particular California waterbodies. EPA derived its criteria based on toxicity data indicating concentrations that are necessary to protect aquatic life. In most waterbodies having impairment of aquatic life, there are particular pollutants or other factors that are causing a stress. The concentrations of all other contaminants not causing stress are below their criteria. The comment's observation that existing concentrations are below the criteria in some waterbodies does not provide a reasonable basis for setting or judging a criterion intended to be necessary for the protection of aquatic life.

Comment ID: CTR-065-004
Comment Author: Environmental Health Coalition
Document Type: Environmental Group
State of Origin: CA
Represented Org:
Document Date: 09/26/97
Subject Matter Code: C-17b Methodologies Aquatic Life
References:
Attachments? N
CROSS REFERENCES

Comment: EHC DOES NOT SUPPORT THE "MOST OF THE SPECIES, MOST OF THE TIME" TEST

EHC is VERY concerned about the EPA.proposing criteria to protect "most of the species and their uses most of the time". This is tantamount to condoning and facilitating marine life destruction through regulation. It is a terrible policy and should be abandoned. We are allowing polluting industries and dischargers. to bombard our marine resources with pollutants that result in multiple chemical exposures

of which we know very little of the, cumulative and synergistic effects.

Further, what is the EPA's definition of "most"? Is it 99.99%, 75% or 51%? Will estuarine environments survive standards that could be argued need only protect half of the organisms? This is completely unacceptable. EPA promulgated standards should be protective of all the living creatures 'in and' near the waters of the state. If we err, let us err on the side of protection. Although there is much that is unknown about impacts of multiple pollutants on marine organisms, one thing is for sure: once the damage is done it is hard to undo. One look at DDT- and PCB contamination in California waters should serve as an adequate reminder.

Discharging known, toxic pollutants into the marine environment is not a right, it is a privilege. The privilege should be granted only when the discharge does not harm the marine environment. Instead of trying to closely walk the ever unknowable line of exact protection, EPA should propose standards that assure complete protection so that bays, oceans, and inland waters containing all of their species, all of the time can be passed to the next generation.

Response to: CTR-065-004

Comment ID: CTR-099-001b
Comment Author: Emil A. Lawton, Ph.D.
Document Type: Citizen
State of Origin: CA
Represented Org:
Document Date: 10/03/97
Subject Matter Code: C-17b Methodologies Aquatic Life
References:
Attachments? N
CROSS REFERENCES C-17a

Comment: This letter is to comment on the water quality standards for California surface water. It is my stronly held opinion that the proposed standards do not meet the minimum legal requirements of protecting health, let alone other aspects of the environment. The numbers should be adjusted to lower MAC's by roughly an order of magnitude.

Response to: CTR-099-001b

EPA disagrees. EPA believes that is the criteria are fully protective of designated aquatic life uses. The commenter offers no evidence that the criteria are not protective.

EPA agrees that with the comment that a criterion that would protect only half of all the aquatic organisms would be unacceptable. However, EPA finds no evidence, within the comment or elsewhere, indicating that its criteria yield so little protection.

EPA criteria are derived such that they would be expected to protect at least 95 percent of the genera, based on prediction from measured toxicological values, a very high percentage (usually more than 99 percent) of the time. This very high level of protection is sufficient to protect aquatic life uses.

Comment ID: CTR-102-001b
Comment Author: Bryan Gordon
Document Type: Citizen
State of Origin: CA
Represented Org:
Document Date: 10/10/97
Subject Matter Code: C-17b Methodologies Aquatic Life
References:
Attachments? N
CROSS REFERENCES C-17a

Comment: Please ensure that the Federal water quality standards provide the maximum protection for people as well as the animals that inhabit our state's waterways.

Thank you for protecting America's waterways and the Americans and American animals that come into contact with them.

Response to: CTR-102-001b

EPA acknowledges the comment.

Subject Matter Code: C-17c Meth.New Human Health Meth.

Comment ID: CTR-035-023
Comment Author: Tri-TAC/CASA
Document Type: Trade Org./Assoc.
State of Origin: CA
Represented Org:
Document Date: 09/25/97
Subject Matter Code: C-17c Meth.New Human Health Meth.
References:
Attachments? N
CROSS REFERENCES

Comment: p. 42177 --New Human Health Criteria Methodology Please clarify when the new human health criteria methodology will be available, when EPA will be promulgating revised criteria as a result of the new methodology, and how those will be incorporated into the CTR and ultimately into permits. Will the criteria being adopted in this rule automatically be updated, or will EPA update them through subsequent rulemakings? If it is EPA's intent to modify the criteria in the CTR without undertaking a full rulemaking process, then those changes must be analyzed now, including an analysis of the costs and benefits of the different criteria. Also, please clarify whether, if specific criteria are changed within 5 years of adoption of the CTR, it is EPA's intent that compliance schedules already placed into permits would be extended if necessary to meet lower criteria?

Response to: CTR-035-023

Any changes to the CTR as a result of the new human health criteria methodology would be done through rulemaking to stay, withdraw, or amend the CTR. The draft revisions to the methodology for deriving ambient water quality criteria for the protection of human health were published in the Federal Register on August 14, 1998. A 120-day public comment period closed on December 14, 1998. The draft methodology revisions are available at the U.S. EPA National Center for Environmental Publications and Information (NCEPI), 11029 Kenwood Road, Cincinnati, OH 45242 or (513) 489-8190. They also may be downloaded from the EPA Office of Science and Technology's internet site (http://www.epa.gov/OST/humanhealth).

The most recent Federal action establishes the Agency's current water quality criteria. To date, the most recent Federal recalculation of 304(a) criteria occurred in the CTR. These 22 CTR criteria, plus the previously published 78 criteria, are the Agency's recommended human health criteria. As such, they will continue to be used as the basis for Agency decisions, both regulatory and nonregulatory, until EPA revises and reissues chemical-specific criteria. For example, EPA intends to use these criteria: (1) as guidance to States and Tribes for use in establishing water quality standards; (2) as the basis for EPA promulgation of water quality standards; (3) in establishing NPDES water quality-based permit limits, where the criteria have been adopted by a State or Tribe or promulgated by EPA; and (4) for all other purposes of Section 304(a) criteria under the Act.

EPA views the criteria program as constantly evolving. When the AWQC Methodology Revisions are final, any chemical-specific 304(a) criteria published using the revised methodology will be considered the Agency's most current recommended 304(a) criteria. EPA notes revisions of existing 304(a) criteria prior to the finalization of the revised methodology may be undertaken and are not precluded. Until such time as EPA re-evaluates a chemical, subjects the criteria to appropriate peer review, and subsequently

publishes revised chemical-specific 304(a) criteria, the existing recommended 304(a) criteria remain in effect.

States and Tribes have three options when adopting water quality criteria for which EPA has published 304(a) criteria. They can establish numerical values based on 304(a) criteria, 304(a) criteria modified to reflect site specific conditions, or other scientifically defensible methods. When States or Tribes revise their water quality criteria to correct deficiencies identified in a Federal promulgation, EPA will assess the scientific defensibility of the criteria in terms of the Agency's most recent recommended water quality criteria. Once new or revised 304(a) criteria are published by EPA, the Agency expects States and Tribes to adopt new or revised water quality criteria into their water quality standards consistent with the three options discussed above. EPA emphasizes it will be reviewing State and Tribal water quality standards to assess the need for new or revised water quality criteria. EPA believes five years from the date of publication of new or revised 304(a) criteria is a reasonable time frame by which States and Tribes should take action. This period is intended to accommodate those States and Tribes which have begun a triennial review and wish to complete the actions they have underway, deferring initiating adoption of new or revised water quality criteria until the next triennial review.

Subject Matter Code: C-18 Conversion Factors

Comment ID: CTR-035-017
Comment Author: Tri-TAC/CASA
Document Type: Trade Org./Assoc.
State of Origin: CA
Represented Org:
Document Date: 09/25/97
Subject Matter Code: C-18 Conversion Factors
References:
Attachments? N
CROSS REFERENCES

Comment: p. 42172 -- Acute/Chronic Saltwater Conversion Factors for Metals We question the validity of the assumption that acute saltwater conversion factors for metals can be substituted for chronic. EPA should further explain and document the basis for substituting acute saltwater conversion factors for chronic saltwater conversion factors.

Response to: CTR-035-017

Because EPA's previous criteria guidance had been expressed as total recoverable metal rather than dissolved, EPA developed conversion factors that account for the possible presence of particulate metal in the laboratory toxicity tests used to develop the total recoverable criteria. EPA has used the best data available to it for estimating the percentage of dissolved metal in the toxicity test waters which support the derivation of its criteria. The commenter provides no evidence that the application of saltwater acute conversion factors to saltwater chronic criteria is inappropriate. Nor does the commenter offer an alternative solution. EPA believes its assumptions regarding chronic conversion factors are reasonable; EPA believes that using dissolved metals criteria for water quality standards better approximates the bioavailable metals in the water column and better approximates metals toxicity than do criteria based on total recoverable metal. Based on the close similarity between the measured conversion factors for freshwater acute and chronic toxicity tests, and absent any other information to the contrary, it is reasonable to expect that saltwater acute and chronic conversion factors would be similar to each other.

Subject Matter Code: C-19 FDA Action Levels

Comment ID: CTR-016-006
Comment Author: San Francisco Bay RWQCB
Document Type: State Government
State of Origin: CA
Represented Org:
Document Date: 09/25/97
Subject Matter Code: C-19 FDA Action Levels
References:
Attachments? Y
CROSS REFERENCES

Comment: Calculation of Final Residual Values Based on FDA Action Levels

The Regional Board agrees with EPA's assessment that it is inappropriate to use FDA Action Levels to develop criteria intended to be protective of aquatic life; at the same time, we question the appropriateness of using Action Levels as the basis for criteria intended to be protective of human health. In 1991, Board staff reviewed all historical Federal Register documents pertaining to the Action Levels dating back to the early '60s. In that review, we found that the majority of Action Levels FDA was using in 1991 were derived from studies conducted by pesticide manufacturers in the '60s. These studies characterized the expected residual level of pesticides in meat and poultry following application of pesticides on grain according to manufacturer's specifications. The implicit presumption on FDA's part was that the marginal health risks posed by pesticide residues were negligible compared to the benefits associated with pesticide-aided food production. We sincerely hope that the FDA has revised its methodology for deriving Action Levels since 1991, but do not believe that a predetermined percentage of food on the market is an acceptable factor to include in the derivation of environmentally protective criteria. Based on our findings, we encourage EPA not to use any Action Level until it has passed a level of technical review comparable to other risk-based federal environmental criteria.

Response to: CTR-016-006

None of EPA's Section 304(a) human health criteria, including the criteria that are being promulgated in today's rulemaking, are derived using FDA action levels.